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ARTICLE I.

MODERN SANITATION. SOME OF ITS FALLACIES AND RELATIONS TO THE ZYMOTIC DISEASES, WITH ESPECIAL REFERENCE TO THE DEFECTS OF OUR SO-CALLED "MODERN IMPROVEMENTS." By G. FRANK LYDSTON, M.D., late Resident Surgeon Charity Hospital, and State Emigrant Hospital and Refuge, New York City; Lecturer on Genito-Urinary Diseases, College of Physicians and Surgeons, Chicago, Ill. Read before the Chicago Pathological Society, November 12, 1883.

The subject which I have the honor of presenting to the society this evening, is one in which I have always taken the deepest interest, and one, too, upon which I have had occasional opportunities to make practical observations; but when the idea of embodying the results of those observations in an article first

suggested itself to me, I was somewhat at a loss for a title suitable to such a topic, and since beginning the work I have keenly realized the fact that the one selected is so broad and comprehensive in its scope, that the few ideas which I shall endeavor to present to you this evening are incapable of doing it justice. One can hardly realize the vastness of such a subject, until he has himself attempted its discussion. I must, therefore, apologize for the disappointment which may quite naturally be experienced from the comparison of the title of this paper with the subject matter which it contains.

The subject of modern sanitation is by no means a new one, but it is of such great practical importance that a presentation of new ideas in relation to it, or even a discussion of well recognized facts bearing upon it is seldom out of place, and in my estimation the time is not far distant when our medical colleges will add the teaching of at least the rudiments of practical sanitary engineering to the duties of the chair of hygiene. The knowledge thus acquired will give to the physician of the future a marked superiority over him whose learning consists mainly of ideas concerning a third blood corpuscle, or a newly discovered cell in the cortex of the brain of the dog; who, in other words, has literally been taught to "strain at gnats and to swallow camels." In order that such sanitary teaching shall be of practical benefit, and not an actual injury, considerable modification of many of the present views and customs of sanitarians will become necessary. If I were asked to name the most potent cause of sickness among the population of our large cities, and the most important influence tending to promote the dissemination of those diseases termed at the present day "germ diseases," but which, for the benefit of those who object to the army of infinitesimal organisms, we will term the "zymoses," or miasmatic affections, I should answer, "modern improvements," and I should feel that I had spoken volumes of practical truths in those two words. "But," it may be asked, "is not our expensive plumbing founded upon correct principles, and can there be anything better as a preventive of the evil effects of filth accumulations and noxious materials of various kinds?" To this I would simply answer, that the principles of modern plumbing are not

only not correct, but they are radically wrong ; and instead of being a safeguard against disease, they actually promote its extension.

Next to an entire disregard for sanitary matters and simple cleanliness, the plumbing of the modern mansion is the worst system that could possibly be adopted for the purpose for which it is devised. It defeats its own object, and under the present system of drainage the plumber, however skilful, is simply attempting impossibilities, and as might naturally be expected, is continually failing. I think that I am perfectly safe in asserting that there is not in Chicago to-day a perfect piece of plumbing, or a drain trap that perfectly fulfils the object for which it is intended. Our more advanced sanitarians are fast coming to realize the imperfections of our plumbing and sewerage systems, imperfections that are a necessary evil, no matter how great the outlay of time, money, and skill that may be made in the attempt to introduce perfect plumbing and drainage into our dwellings. If such a thing exists, I should like to be shown a single perfectly ventilated soil or drain pipe, or sewer, or a perfectly trapped water closet in this city. Examples may be cited in which such things are supposed to exist, and quite reasonably, too, if we consider merely their expensiveness and elaborateness of detail, but it will be found that none of them will bear searching and scientific criticism. The reason for this is quite simple, viz.: *the absolute impossibility of producing any mechanical arrangement for the purpose of preventing the escape of noxious vapors and gases into our houses, which is free from defects, and will perfectly fulfill the function for which it is devised.*

In calling attention to the fallacies of our modern sanitary arrangements, we will first consider that nowadays apparently indispensable convenience, the bath or water closet, with which our houses of even modest pretensions are generally supplied. As a rule, we find this closet upon the same floor with numerous sleeping apartments, being probably so placed in order that the unconscious occupants may have the full benefit of the expensive plumbing, with its manifold defects, and noxious emanations ; in short, that they may duly appreciate the luxury of "all modern improvements," which have been, perhaps, so highly lauded as the chief attraction in that particular dwelling. Sometimes the

closet is situated upon the upper floor of the building, in which situation the ventilation is possibly better, and the evil consequently somewhat mitigated, but more often it is in the middle of the house, or as in the case of our modern flats, each floor is supplied with a closet. But the situation is not all that is open to criticism; usually these closets are ill ventilated, and completely secluded from the sunlight. Even pure air, deprived of light and the molecular change afforded by ventilation, grows stagnant and devitalized, and its oxygen inactive*, in which condition it is decidedly unwholesome, and how much more important must be the changes in air loaded with fecal emanations and the various noxious effluvia which arise from the human body. Allowing that the closet is perfectly trapped—which in my estimation is an impossibility—there must necessarily be noxious exhalations diffused through the atmosphere while the closet is in use, and if these are not quickly removed by thorough ventilation they must necessarily undergo organic changes, which render them particularly obnoxious to the health of individuals occupying the house. This is especially apt to be the case if the closet be used by persons who are in ill health from any cause, and whose excretions are consequently abnormal. Whether the germs of disease may develop *de novo* under such unsanitary conditions is a mooted point, I, myself, however, being of those who believe in such a spontaneity. Or, lest I be understood as being a believer in spontaneous generation, I will qualify my statement by asserting that I believe that under such circumstances the innocuous organisms always present in the atmosphere in greater or less number may undergo a change, and acquire new properties by virtue of which they become infectious, and capable of transmitting disease. An apparent illustration will be cited later on.

That the specific germs of various diseases will, when introduced into a room loaded with animal exhalations, multiply rapidly and increase in virulence is, I presume, disputed by no one. Now, as for the trapping of this water closet, it has been conceded by good authorities that a perfect system of trapping has yet to be invented. No trap, however perfectly constructed, as far as

*Richardson, in his *Diseases of Modern Life*, calls especial attention to this point, which is quite generally ignored.

mechanical principles are concerned, can completely prevent the upward passage of the noxious volatile gases and vapors arising from the soil pipe. This may be better appreciated by considering the fact that there is always an upward pressure upon the distal side of the valves exerted by the volume of gases arising from the sewer, and in addition a continuous suction force upon the proximal surface of the trap, produced by the rarefied atmosphere of the closet. The ball valve, S. and P. water traps are alike defective, and although they may partially prevent the passage of gases when they are closed, none of them offer much hindrance to the escape of a considerable volume of gases and noxious vapors the instant the trap is pulled open. I should like to see a movable joint or valve which is so nicely adjusted and the surfaces of which are so accurately apposed that no gases can pass it. Gases which may under moderate pressure be forced into and through a granite block, are not likely to be greatly obstructed by any trap, however nicely its joints may be made. An attempt to overcome this defect in the trap is illustrated by the S. or water trap. In this instance, the gases are supposed to be absorbed by the water, which is constantly standing in the trap; but unfortunately, the small amount of gases retained by the water is infinitesimal, as compared with the whole amount which rises from the pipes, and as a consequence we have the residue over and above the absorptive power of the water to retain such materials, simply filtered through it, and up into the atmosphere of the room, shorn perhaps of a portion of its offensive odor, but not a whit less noxious than when it left the sewer.

As I have already intimated, the air of the bath-room is always at a higher temperature than the air, gases, and vapors in the soil pipe and sewer, and there is consequently a suction force on the one hand and an upward pressure of gases against the trap upon the other, favoring a sudden influx of gases and vapor into the room, as soon as the trap is opened. No trap, it seems, can be made so perfect that this influx will not occur in greater or less amount, and there is therefore no remedy for the evil as far as the mere escape of these substances is concerned. But their noxiousness is partially remediable, for it is perfectly feasible to destroy any specific or poisonous property which such effluvia

may contain. This can only be done by chemical means. The trap should be so arranged that the water will run for some time after it has been opened and closed, and its valves should be double, and disposed in such a manner that when the upper one is opened, the lower will be closed, and *vice versa*. Between the two, and in the S, if such be the form of the trap, there should be a space constantly filled with a considerable quantity of water, and into this a solution of zinc chloride, sulphate of iron, or similar disinfectant, should be trickling continually, during the time that the stool is being used, and should run for a short time after its use has been suspended. This should convert the water which constantly stands in the trap into a solution sufficiently powerful to effectually decompose all foul gases, and to destroy all disease germs which may be present in the effluvia of the sewer. These are the indications, and it only remains for the proper mechanical principles to be applied, for their fulfillment. A recent invention called the "germicide" attempts to meet these indications after a fashion. It even goes further, and by a disinfectant (?) spray, endeavors to destroy the noxious emanations which arise during the use of the closet. The apparatus is well enough in its way, but nothing will fully meet the indications, that is not a composite part of the trap itself, for in the absence of proper mechanical principles, such a contrivance is almost worthless.

Even when constructed as I have indicated, the trap will not perfectly fulfil its function, for there must necessarily be some escape of gases during the flow of materials from the pan to the trap, and from the trap into the soil pipe, at a time when the disinfectant solution is too dilute to be of service. As for the spray mentioned, it is an attempt to "slay an elephant with a popgun," and should be replaced by free ventilation, and the admission of the sunlight, in the absence of which the processes of oxidation and chemical decomposition in nature's laboratory with difficulty occur. These suggestions have been made under the supposition that the water closet in dwellings is insisted upon, and that we are compelled to make the most of a bad bargain. We may, by following these suggestions, mitigate the evil, but cannot entirely remove it. Would it not be better to lay th

demon completely by dispensing with the closet in the dwelling, and building it as a separate establishment, not after the style of the old-fashioned privy—which is, however, in my estimation, far preferable to the modern closet, as far as its influence upon sanitation is concerned—but with the style of trap already indicated? But there is a stronger element of danger to the health of the inmates of our modern dwellings than that afforded by the water closet, *per se*, and that is the stationary wash basin.—The bath tub is usually situated in the water closet, and simply adds its evil propensities, which are identical with those of the stationary wash basin, to those of the closet proper.—Here we are absolutely helpless, as far as I can see. Practically, the man who sleeps in a room provided with one of these conveniences is in direct and most intimate relations with the sewer. His sleeping apartment is at one end of a direct channel of communication with the excreta, and refuse material of the whole neighborhood. The arrangement is much like the apparatus for the administration of nitrous oxide gas. We will let the sewer stand for the reservoir of gas, the waste pipe for the tube, and the room for the mouth piece, but instead of putting the latter over the mouth of the individual, we will most conveniently put him inside of it. The gas is already turned on, and all our victim of misplaced confidence in plumbers has to do, is to breathe as usual, and he will get his system nicely saturated with sewer gas, together with any little donations in the shape of disease germs, which may have been contributed by his sick neighbors. His sleeping apartment is the terminus of a channel of stenches and filthy vapors too numerous to mention, and of germs the most various and infectious.

Our sewers are so imperfectly ventilated, that they are constantly full of gases, which, from their close confinement and tendency to expansion, are necessarily exerting a constant pressure in all directions, and are bound to escape in the direction offering the least resistance, and consequently enter the various offshoots and soil pipes opening into the main sewer. At the end of some one of the various diverticula of these modern improvements, we have a room, the heated air of which exerts a continuous suction force,

and literally draws the gases upward.* In this room we find the man to whom we alluded a moment ago, sleeping perhaps, and all unconscious of the unsavory condition of the atmosphere. The windows may be tightly closed, lest a single molecule of the lovely sewer-gas should escape. I think that nearly all of us must have noticed the gurgling produced by the waste water as it escapes from our wash basin. Now, it is not the downward suction force of the waste pipe that causes this ; *it is the displacement of the gases and vapors in the pipe by the escaping fluid, and these gases, when thus displaced, rise, and escape into the room.* What better proof of my statements could be adduced ? "But," it may be argued, "the room does not smell of sewer gas, and is surely not in very bad condition." Very good ; the room does not smell badly, perhaps, but that is no proof that its atmosphere is in a healthful condition, or that sewer emanations are not present in greater or less amount. Now, what is "sewer gas," so-called ? It is not a definite compound, but is composed of sulphuretted and carburetted hydrogen, ammonia, watery vapor, various organic matters in a state of putrefaction, and, worst of all, very often it contains the specific germs of disease.

The odorous elements of this villainous compound are perhaps the least noxious of all, and the worst cases of sickness resulting from sewer emanations, are often experienced in dwellings in which no odor is perceptible. As for the odor of sewer gas, were it not for its presence in most instances we would have no protection whatever, for it warns us of impending danger.

Why is it that there is such a continual warfare upon the various beneficent stenches ? They are our only salvation. It would be well for some of our sanitary enthusiasts to attempt the destruction of the enemy itself, instead of wasting their time and energies in disfiguring its uniform and colors. But more of this hereafter. We will now return to our man. If you remember, we left him peacefully respiring a choice mixture of gaseous and organic substances contributed by the sewer in the middle of the street. This alone was bad enough, for, as Richardson says, "the disease *par excellence* derived from the sewer, is that con-

* *Vide an interesting article by Prof. Max von Pettenöfer on "Ground Air in its Hygienic Relations."* *Pop. Science Monthly*, July, 1877.

tinued fever which is induced by the natural atmosphere of the sewer, by the inorganic products of organic decomposition, of which sulphuretted hydrogen(?) plays a leading part," but he is subjected to something infinitely worse than mere communication with the sewer. . He is in direct communication with a case of diphtheria, scarlet fever, typhoid, or other similar affection, a few doors or perhaps some blocks away. The excreta from this patient are thrown into the closet, as a rule, without any attempt at disinfection, and finally reach the sewer, to add specific properties to the already great noxiousness of the composite whole which we term "sewer gas." Now, this condition of affairs has not been allowed to exist without attempts to remedy its evils, and, obviously, the most natural thing in the world would be to attempt to prevent the entrance of gas into the rooms—*i. e.*, to prevent the damming back of the gases and vapors into the dwelling, by ventilators interposed at various intervals in the course of the soil pipes. This is very often done, but almost invariably imperfectly. The ventilation is insufficient, the ventilating pipes being too small; and, above all, there is no upward current in the ventilators, and the gases, as a consequence, ignore them entirely, and pour by, and up into the house. Now, if we must have *a* waste and soil pipes, let them at least be ventilated as perfectly as possible. The main sewer should have open ventilators at frequent intervals, and should be frequently flushed, preferably by the method adopted in certain portions of Paris, by a continuous stream of water allowed to run in the gutters morning and night. There should be one large ventilator between the opening of the soil pipe into the sewer and the building, and there should be at least two ventilating shafts communicating with the soil pipes in the building. These should be perfectly straight, and should open at the top of the house, or preferably, into the chimney. They should either pass near the furnace or should open into a heated chamber at the top of the building, thus ensuring a draught in the pipe, and an upward movement of the noxious gases arising from the sewer, which have been intercepted as they were being dammed back into the house. *Without some such arrangement, ventilating shafts are absolutely worthless, for the gases and vapors will inevitably pass by them,*

and instead of rising into the cold air at the top of the house, will seek the far warmer and more inviting atmosphere of the rooms at the ends of the waste pipes.

Now, supposing we have succeeded in rendering our water closet innocuous, or nearly so, and have ventilated our soil pipes and sewers, we ought to feel quite secure, *and so we might be, if our plumbing was only perfect, but it is absolutely impossible to make it so.* The reasons for this have been set forth quite clearly by Dr. F. H. Hamilton*, and there is no disputing his conclusions. There is more security in iron pipes, according to this authority, than in lead, but they rust easily, unless protected by what is known as porcelain lining, and they are not only expensive, but very awkward in manipulation, and obviously unfitted for use where pipes of small caliber are required. In the case of leaden pipes, galvanic action is set up in the elements contained in the solder composing their joints, as a result of which they became corroded and defective in a very short time. As a consequence, no house is safe from the evils of imperfect plumbing, unless the pipes are very frequently inspected, and rarely will they remain perfect for a year. In addition, it is always difficult, and often impossible, to detect all imperfections which may exist, and prove elements of danger. Under these circumstances, there is only one means of safety, and that is, as Hamilton suggests, to remove all "modern improvements" from our residences. Let a separate building be set apart for baths, water closets, stationary wash basins, and the like, this building communicating with the main building by a well ventilated passage-way, so arranged that the door of the extension and the door of the main building can never be open simultaneously.

Quite a number of intelligent persons have already adopted modifications of this plan, or similar ones, and it is a striking fact, that some of our most pretentious private residences and hotels in the East have had their various modern conveniences, and especially the stationary wash stands removed. In Vanderbilt's new residence, I believe, they have been entirely omitted. When this plan is not followed, the next best thing to be done is to follow the plans of disinfection, free ventilation, and frequent

**New York Medical Gazette*, March 25, 1852.

and careful inspection of the plumbing, already set forth. The war cry of the sanitarian of the future will doubtless be—providing he is not compelled to practice medicine for subsistence, in which case he might quite naturally be expected to advocate the plumber's cause—"away with modern improvements!" very much as our German friends are crying: "fort mit dem spray!" but with a great deal more justice.

A very important feature of modern sanitation is the season, as well as the manner of erecting buildings. The mistake is quite commonly made of erecting buildings in winter; when the moisture in the masonry and other materials can not evaporate, and allowing them to be occupied before the walls have thoroughly dried out. It is estimated that a good brick can absorb about 10 per cent. of its own weight of water. Assuming that it only takes up 5 per cent., and allowing about 100,000 bricks to the building, and about 5 per cent. weight of water for the mortar, which is a very low estimate, we have 100,000 pounds, or 10,000 gallons of water in the composition of an ordinary brick dwelling, which must evaporate before it is fit for habitation.* These damp walls disturb the equilibrium of the bodily temperature of the occupants of the house, chiefly by rapid abstraction of heat, and as a result we have those vaso-motor disorders, and organic changes due to "taking cold," viz.: rheumatism, catarrh, bronchitis, Bright's disease, etc. I do not wish to be understood as recommending impervious building materials, for porous materials and pervious walls are absolutely necessary to keep the air of our dwellings dry and wholesome, but they must be kept dry and pure by heat and free ventilation, and no house should be occupied until it has been thoroughly dried and aired. Above all, when the house is finally occupied, the air should be kept sweet and pure, and free from sewer emanations, lest the porous building materials absorb and elaborate noxious gases and vapors. If the walls of our dwellings are saturated with water, it is obvious that all moisture over and above their capacity for absorption must either condense upon their surfaces and the bodies of those persons occupying the rooms, or remain in the atmosphere as vapor. By this vaporous condition of the atmosphere the heat of

* Pettenkofer Op. Cit.

the animal body is not only abstracted too rapidly, but the eliminative function of the skin is prevented, or at least diminished. As a result of the vaso-motor disturbances and derangement of physio-chemical changes thus induced, we have internal congestions, fever and a vicarious strain upon the mucous membranes of the respiratory and intestinal tracts and kidneys. In short, we have a cold, and with it perhaps an inflammation of that portion of the economy least capable of resisting the strain. As has been stated, these injurious effects of dampness may be prevented by free ventilation and warmth. New buildings should be thoroughly dried out by heat, and the free use of unslaked lime, before occupation.

But porous building materials have some disadvantages, the chief of which is the difficulty of disinfecting them when once they have become saturated with noxious vapors and gases, which they so readily absorb, and almost as readily give up again after they have absorbed a certain amount. Thus a building, the walls of which have once become saturated with sewage emanations, or the emanations of a large number of human beings, *i. e.*, crowd poison, will retain its poisonous properties for an indefinite time. This is especially apt to be the case with sick rooms and hospitals, which may continue to generate disease and increase the virulence of the contagion which they elaborate until they are absolutely untenable. The ordinary measures of disinfection are inefficient to correct this condition, for the reason that they are not sufficiently powerful, and do not reach the disease germs which are contained in the pores of the masonry and wood work. An instance of this kind was seen at Bellevue Hospital some years since. The building had become so saturated with poison that to be operated upon in Bellevue Hospital meant death by pyæmia. Every measure of cleansing, ventilation, and disinfection seemed ineffectual, and the only thing left would have been the entire destruction and rebuilding of the hospital if the matter had not been placed in the hands of the eminent chemist, Professor Doremus. This gentleman cleared the hospital of its inmates, and generated enormous quantities of chlorine gas in the wards, by means of the chloride of sodium, sulphuric acid, and the binoxide of manganese. The building having been tightly closed,

was allowed to remain filled with the gas for some days, after which time it was again occupied, and was found to be perfectly disinfected, pyæmia being subsequently a thing of rare occurrence. The chlorine had penetrated the walls of the building and destroyed the germs of disease which had been retained and elaborated in their substance ; and it was only by the use of this powerful disinfectant, and in quantities sufficient to instantly destroy the life of any human being who might be so unfortunate as to inhale it, that these little organisms could be destroyed. Chlorine gas is especially adapted for purposes of disinfection, on account of its powerful affinity for hydrogen. Nearly all noxious vapors and gases, or those at least which emanate from the animal body, are composed largely of hydrogen, and once this is removed, they are decomposed and their noxiousness destroyed. Chlorine gas then is the disinfectant *par excellence*, and all other disinfectants are very inefficient by comparison.

Building materials vary somewhat as regards their porosity or perviousness to gases and vapors. Sandstone and brick are quite permeable. Wood absorbs noxious materials quite readily. The principal substance used in the construction of buildings, as far as its powers of absorption and permeability to gases are concerned, is the mortar or plaster. Granite and limestone are not very permeable, but such a large quantity of mortar is necessary in joining them, that this impermeability is more than compensated for. Thus it may be readily seen that any building may under favorable circumstances become unfit for habitation, and especially for hospital use, from simple absorption of poisonous materials from the air within it. In this manner, many buildings become so saturated with the contagion of different diseases, that their entire destruction by fire would be the most sensible and economical method of disinfection. I have personal knowledge of several buildings of this kind, the relations of which to their occupants are of the utmost importance. The first of these that I will mention is the New York Maternity Hospital. This is built in the form of a low wooden pavilion, or cottage, and is about half a mile from the main building of Charity Hospital, Blackwell's Island, of which it forms a part. This building had been used for an obstetrical ward entirely, and had been in use

for several years. Outbreaks of puerperal fever, at the time of my service at the Charity Hospital, were frequent, and it was my good fortune to select the waiting wards in which the women were retained until confinement was imminent, as an adjunct to my surgical service. In fact, outbreaks of fever were so frequent at the Maternity, that the waiting wards afforded a better midwifery service than the obstetrical service proper, all of the cases being delivered in the waiting wards during an endemic of puerperal fever at Maternity.

Now it was rather a peculiar fact that cases of fever were rare in the waiting wards of the main hospital, in which the attending physician had a general service at the same time, while they were frequent at the maternity proper, where there was a special corps of physicians who were not allowed to enter the general hospital wards or attend surgical operations, for fear of infection. An additional circumstance in favor of a successful obstetrical service, was that *all cases complicated by malaria, syphilis, Bright's Disease, or anything favoring puerperal complications, were at all times retained in the waiting wards.* Now, the simplest explanation of these peculiar facts is, that the maternity hospital had never been thoroughly disinfected after the development of puerperal fever, and the poison had consequently kept accumulating, until the building was absolutely unfit for an obstetrical ward. At the main hospital a large number of cases of labor only occurred during the time that there was an endemic of fever at Maternity, and consequently, at other times the opportunities for the occurrence of fever were relatively few. The maternity building has recently, I believe, been given up entirely, as it should have been long ago.* At the time of my own service, the women were in such dread of being sent to the maternity hospital, on account of the frequent occurrence of fever in its wards, that they would often conceal their pains until too late for their transference to that institution. Another even more striking instance of the pestilential properties acquired by buildings used for the shelter of large numbers of human beings, may be seen at Ward's Island,

* In a letter to the *N. Y. Med. Record* for Dec. 23, 1882, I set forth as another reason for the prevalence of puerperal fever in the maternity hospital, the indiscriminate syringing, and other meddlesome midwifery, and constant battle with "germs" in vogue in that institution.

New York. On this island, and under the control of the State Emigration Commission, are two large wooden structures, known respectively as the "barracks" and the "nursery." In one, indigent adult male emigrants are kept, and in the other the women and children. Cases of enteric fever arose quite commonly among the men and women, which were probably due to the general unsanitary condition of both barracks and nursery, but other diseases, excepting, of course, an occasional case of small-pox, which was immediately isolated, were rare, only because adults are not very susceptible to the contagious exanthemata. Among the children, however, the results of habitation of infected buildings were only too evident, for just as soon as a family was sent to the nursery, nearly all the children who had not had measles or scarlatina, contracted one or the other disease. Indeed, it was a common thing for one or the other gentlemen of the medical staff and myself, to speculate as to the number and variety of cases which we would receive into the children's wards from some large family sent to the "nursery."

Now it may be asked, why we did not remedy the evil, and such a question would be quite natural, coming from any one who has never had the pleasure of serving in a public institution controlled by politicians, but those who have had such service can readily appreciate the fact that protests upon the part of the staff were but a waste of breath, not to speak of the dangers of the official guillotine. Whether a hospital millennium will ever arrive, is a question, but it most assuredly never will until hospitals are placed under the absolute control of their physicians. In the instances which I have quoted, the torch would have been the only efficient remedy. For my own part, I believe that all expensive buildings, which are used for hospital purposes, should be periodically disinfected with chlorine gas. They should be so arranged that no ward can be in continuous use for more than six months, or at most a year, the pavilion or cottage hospital plan of construction being the best for this purpose, as one building can be thrown open and kept thoroughly ventilated for months if necessary, while another is being occupied. The best plan, perhaps, would be to build inexpensive structures, which can be destroyed entirely after a certain time, and rebuilt, thus doing away

with inefficient disinfection, and the possibility of saturation with the poison of disease. By these means only can our houses and public institutions be prevented from becoming literal hot-beds of disease.

A very important fact relative to modern sanitation is brought forward by Pettenkofer, in his lectures upon hygiene, viz.: "The permeability of the soil to air and gases of all kinds. By a consideration of this property of the earth, one can readily understand how accumulations of filth in the cellars or basements of houses may give rise to serious results in the occupants of dwellings some distance away. Earth, which is so generally regarded as a most potent disinfectant, will absorb gases, but will not retain them necessarily, and never over a certain amount; it will filter both gases and fluids, but *it will not necessarily remove their noxious properties for evil*. This is important as showing that *local unsanitary conditions may through the medium of the porous soil and independently of the sewers produce deleterious effects in persons whose dwellings are some distance away from the site of filth accumulation*. This should be remembered, as it may serve to explain many otherwise inexplicable cases of disease. To quote Pettenkofer: "Remarkable testimony as to the permeability of the ground, and of the foundation of our houses, has been given by gas emanations into houses which have no gas laid on. I know of cases where persons were poisoned by gas which had to travel for twenty feet under the street, and then through the foundations, cellar vaults, and flooring of the ground floor rooms." To my own mind, this permeability of the soil explains the origin of some of those apparently inexplicable cases of typhoid fever in which the cesspools and closets of the dwelling are on a lower level than the well from which the drinking water is obtained; this arrangement being supposed by many to be an insuperable obstacle to the propagation of typhoid fever through the medium of the drinking water. It seems highly probable that the poison of typhoid fever may exist as a diffusive miasm—containing germs if you will—which may pass upward and in all directions from the focus of infection. If this be disputed for typhoid, it must be allowed that sewer emanations will thus dif-

fuse, and produce an enteric fever, so closely allied to typhoid as to be almost indistinguishable from it.

In spite of many apparently absolutely inexplicable cases of typhoid fever, and the skepticism of many of our best authorities, it is still my own humble opinion that every case of the disease originates in some local unsanitary condition, which may operate through the medium of either the air respired or the water drunk by the affected individual. The air of a foul cellar may give rise to typhoid fever in the people occupying the house above, through their respiratory tracts, quite as readily as can pollution of their drinking water by filth. That the poison of typhoid consists in living organisms or germs, has, it seems to me, been demonstrated;* but I believe that the innocuous organic particles or germs, which are everywhere present in the atmosphere, may, under certain circumstances, acquire new properties, by virtue of which they are capable of transmitting diseases of a specific character, the type of disease being modified by the peculiar local conditions present. The typhoid, or, for that matter, the typhus poison, may arise spontaneously, not from "spontaneous generation," which we hold to be impossible, but by the spontaneous development of specific properties of infectiousness in organisms previously harmless. The best remedy for the danger of the entrance of noxious vapors and gases into houses through the medium of the ground, is to build the walls of the foundations of our dwellings double, leaving a wide area between them, which will also answer the purpose of protection against damp, as is suggested by Fothergill.† This area should, of course, be perfectly ventilated. In addition, the cellar floor should be double, a space being left between its layers, which communicated with the area, and is thereby freely ventilated. As an additional precaution against damp, the outer walls and the floor of our cellars might be constructed of glazed tile or concrete, as advised by the authority just quoted. This arrangement, with free ventilation between the walls of our buildings, would probably be as near

* Vide theory formulated by Desplat and supported by Klebs and Eberth. *Bulletin Gen. de Thérapeutique*, June 30, 1883.

† "Maintenance of Health."

an approach to sanitary perfection, as far as the evils which it is designed to combat is concerned, as could well be devised.

There is a peculiar feature of modern sanitation that sometimes leads me to wish that disinfectants had never been invented. I refer to the tendency on the part of the municipal authorities—and, for that matter, many physicians as well—of some of our large cities, to fight existing or impending epidemics, or even sporadic cases of disease, very much after the fashion of a Chinese method of warfare—with “stinkpots.” Now, this plan of action would doubtless be very effective, if our little disease germs were only vulnerable to stenches; but, alas! they are not, for if they were, extinction of the whole race of germs, bacteria, micrococci, etc., would be an easy matter at the hands of some of our friends. But for this tendency to attempt the suffocation of germs. Certain people, both among the laity and in our own ranks, entertain the delusive idea that all that is necessary to destroy the noxious properties of filth and decomposing matters, whether animal or vegetable, is to give them the odor of carbolic acid, or some other vile smelling compound. In so doing, what do they accomplish? They simply substitute one vile smell by another which is often more intolerable than the original which it is intended to destroy, and which is particularly objectionable in that it lulls them into fancied security. I saw this exemplified in New York City in 1878, during the epidemic of yellow fever in the South. Great and well-founded apprehension was felt by the people lest the disease should appear in the city, and indeed every element necessary to its development was present, all that was necessary being the application of the torch to the tinder, as the city was abominably filthy, and the season a very hot one. Now, obviously the proper course would have been to clean the city thoroughly, and remove, or, preferably, destroy all the rubbish and filth. But, instead of doing this, the authorities cleaned(?) up the filth in a slip-shod way, which merely stirred it up into renewed activity, and then spilled carbolic acid around in a promiscuous manner until the atmosphere was almost intolerable. I verily believe that high-colored urine must have been epidemic at that time, so redolent was the air with carbolic acid, the quantity being only a little short of sufficient to kill the people, and a

great deal short of the amount necessary to destroy germs. Thanks to this thorough disinfection (?), perhaps, but more likely through the interposition of Providence, the city escaped the yellow fever; but in 1881* a fine harvest was reaped in the shape of an epidemic of typhus fever, which was clearly traceable to local unsanitary conditions, in spite of the efforts to shift the responsibility upon immigration and importation of the infection †. The first cases of the disease observed entered the Charity Hospital, Blackwell's Island, and were severally under the care of Dr. Merriam and myself, and in a very few weeks after their detection we were actually overrun with typhus, there being at one time about 160 cases of the disease upon the island. Upon investigation, the origin of the disease was found to be what was known as the Shiloh lodging-house, in the slums of the city. This establishment was formerly a church, but had fallen into decay, and had been converted into a sort of tramps' retreat, a charge of 5 cents being made for a bed upon a bench, sleeping under the benches being said to be free, providing the lodger lived till morning and chopped a stipulated quantity of wood. The lodging-house did a thriving business, and the advantages for the spontaneous development of disease were very fine. The majority of the cases of typhus originated here, fully 150 cases being traceable to either direct or indirect contagion from it. Cases soon sprung up, however, in various other localities, the Italian tenement houses being especially prolific. As far as this epidemic was concerned, I had occasion to feel cordially thankful toward the city fathers and their stinkpots, for the opportunities for clinical and pathological observation thus presented were exceptionally fine, and in fact I have little curiosity to gratify in regard to typhus at the present time, and I might add in regard to cholera, also, although I have had no experience with it. I think, however, that some of those present who have had experience with these diseases will echo this sentiment. We will hope that our own exceedingly conscientious and indefatigable(?)

* In 1880 I believe, the city was in such a filthy condition, that mass meetings of physicians were held to urge precautionary measures on the part of the authorities. This mitigated the evil somewhat, so that the above mentioned epidemic of typhus fever was much milder than it would otherwise have been.

† Liverpool was, I believe, the alleged source of infection.

municipal authorities will not adopt the odoriferous and fallacious plan of prevention that I have described.

But what is to be done in lieu of such a course? Let the streets, alleys and sewers of our city be thoroughly cleaned, and the accumulations of filth removed and destroyed as far as possible, by burning or quick lime, or in certain instances let it be removed a long distance, and spread in thin layers upon the soil, and allowed to dessicate. Let the sewers, soil and drain pipes be frequently flushed, and thoroughly ventilated, and all cess-pools and collections of stagnant water be opened up and cleaned, after which allow them to remain exposed to the air and sunlight. After all has been done that pure water, good ventilation and the sun's rays can accomplish, it will be ample time for "disinfectants," which are well enough in their way, if they are not used to disguise the effects of filth emanations, when the cause should be removed. The application of disinfectant drugs is ordinarily too much like the administration of many so-called "specifics" in cases of disease. *Let the cause be removed, and there will be little use for such substances.*

As I have stated, the use of the stinkpot is not entirely confined to either Chinese warfare, or modern municipal or lay sanitation, but it is exceedingly popular with many intelligent physicians. How often we may enter a sick room and find the windows tightly closed and the light carefully excluded, and be greeted with the odor of chlorine, carbolic acid, or similar substances. There is no characteristic sick room smell, and in the language of the physician and friends, the apartment is perfectly "disinfected." Disinfected by what? On looking carefully around we find on the window sill, under the bed, or in the various utensils about the sick room, little dabs of chloride of lime, or squirts of carbolic acid, which might be termed homœopathic attempts to kill an elephant. And this is disinfection! Save the mark! Would it be possible to convince this physician and these people in attendance that it would require chlorine gas or carbolic acid enough to kill the whole household to even benumb one of the little germs which act as carriers of disease? Or would it be possible to demonstrate to them the fact that there is an increase in the tenacity of vitality as we descend in the scale

of organic life? If so, a great and philanthropic work of charity would be accomplished. Let the physician try to destroy one of these little germs. He will find that they are destroyed, or as some claim, merely benumbed, by a 1 to 2 per cent. solution of carbolic acid. Let him now, if possible impregnate the air of the sick room with carbolic acid to a strength of 2 per cent., and what would become of his patient? It is safe to say that he would soon be pretty thoroughly prepared for a pathological collection. Or let him, as an experiment, try the destruction of the germs in the living blood, in any given case of disease, *a la Declat*, and note the effect of three or four ounces of carbolic acid in the circulation. Now remove the disinfectants (?) from this close sick room, and what do we observe? An indication previously unobserved on account of the stench of the disinfectant, viz.: a fetid and characteristic odor, perhaps of a special character, peculiar to the disease from which the patient is suffering, but in any event disagreeable and unhealthful, and which says in unmistakable language: "Open the windows and let in the sunshine and fresh air." This is a progressive age, and it is to be hoped that the timely prevention of epidemics, and the evil effects of infectious miasms, will be one day managed upon common sense principles, and combated by nature's disinfectants which oxidize and destroy, instead of by disinfectant drugs, whose chief claims to consideration lie in the intensity of the stench which they are capable of producing. Let us have less carbolic acid and more hydric oxide, sunshine and "God's oxygen."

125 State St., Chicago, Oct. 1, 1883.

ARTICLE II.

POTT'S DISEASE AS ILLUSTRATING THE PRINCIPLES OF DIAGNOSIS. By C. E. WEBSTER, M.D.

Perhaps I more than others can appreciate the importance of early diagnosis in the disease under consideration, and as I walk the streets, I am well assured by many living proofs that in the past there has been negligence in this regard.

The busy general practitioner, with his mind harassed by a thousand cares, is liable to overlook the critical condition of some fretful, sickly child until the golden opportunity is lost, and he, the child, is burdened with the perpetual curse of an ineradicable deformity.

In order to present a paper of sufficient breadth of scope to be of general interest, I have incorporated the notes on Pott's Disease, which are for the most part compiled from standard authors, in an essay upon the subject of diagnosis. If this paper succeeds in awakening sluggish memories, and thus some *one* is saved by early treatment from lifelong misfortune, it will have well fulfilled its purpose.

The treatment of a case without a diagnosis is like waging war without a fortified base of operations. It can be done, and such cessfully, too, but it is not the highest refinement of art by any means. The most skilful physician, like the best trained general, may be forced into action without time for intrenchment, and if the odds are not too great against him, he may win the day. Uneducated doctors, like untaught savages, kill, take captive, and are victorious. The one protects his nakedness with a flimsy shield, and the other his ignorance with a fanciful diagnosis. But neither the success in emergency of the expert, or the prosperity of the quack, can justify departure in ordinary cases from the common course of procedure. Therefore it may be assumed that the recognition of the disease treated is the first requisite to successful practice.

Each disease has an individuality of its own, which is preserved through all its varieties and amid all its complexity of symptoms. Were this not the fact, scientific medicine would be impossible, for classification is the first necessity of exact science, and the identification of species is the first requisite to classification. Among diseases, species may be ill defined, may run into each other by innumerable varieties, or a particular case may present some startling anomaly; but strongly marked individual differences are not inconsistent with a specific resemblance, and the most hazy nebula has as real an entity as the most sharply defined planet.

Admitting the entity of a given disease, the question arises, in what does that entity consist? It is like the individuality of a face. Some faces have a characteristic feature; a nose, an eyebrow, a chin that is characteristic, and that face is remembered by that feature. So certain diseases have pathognomonic symptoms; as the periodicity of the attack in intermittent fever, and such diseases can be diagnosticated by their pathognomonic symptoms. In general, faces are remembered not by a process of analysis; not by their individual features, but as single units of cognition. You may know a person intimately, but cannot tell the exact shade of his hair or eyes, the shape of his nose, or the cut of his beard. Let him shave; let time furrow his face with wrinkles and pull out half his fading hair, you will still recognize him, though not a feature but has suffered some appreciable change.

It is the same with most diseases. It is often said of such and such a doctor, "he has a peculiar knack of diagnosis." In what does his peculiar excellence lie? He is old and little educated in the schools; his sight is dim, his hearing dull; he cannot appreciate fine points of auscultation and percussion. The Faraday current is beyond his ken. He can hardly assign a reasonable cause for a single symptom, but he unconsciously coördinates those symptoms that he observes into a single unit of consciousness, giving each feature its due prominence in the picture drawn, and by taking a telescopic view of the case, and by comparing this with similar pictures of other cases that he has seen, he gives his diagnosis. His view is broad. He neglects much detail, but he sees the case as a whole. In general practice, it is this telescopic power of the mind that makes a diagnostician. There is more to diagnosis than this, however.

In common life, recognition of an individual is sufficient. In a court of law, identification becomes necessary. In ordinary practice, a snap diagnosis may be sufficient. In the scientific study of disease, in commencing treatment in a fatal or chronic malady, or in a formal consultation, an exact diagnosis is necessary. This may be reached by one of two methods—either directly, by comparing the symptoms of the case with the described

symptoms of the disease, or indirectly by the differential method, considering all possible maladies that might exist in the case, and eliminating them singly by the direct method, giving the preference to the residual disease.

To illustrate these principles, let us consider the early recognition of Pott's Disease.

A glance at the patient may be sufficient for the provisional or snap diagnosis. You see a sickly child with an anxious expression of face, moving cautiously, seeking support from external objects, and carrying its trunk erect. Throw some object on the floor for the child to pick up. It stoops by flexing the legs, but still carries the body erect and steady, as though the spine was made of glass, and it was afraid of breaking it. The seeking of support, and carefulness respecting jar or strain of spine, are the most distinctive features, and may be variously modified according to the age of the patient, the location and acuteness of the inflammation, and other circumstances of the case.

With the first glance you have recognized spinal caries, but in so serious a matter an opinion should not be given until the exact diagnosis is reached, which necessitates a history of the illness and a thorough examination. If unwilling to assume the responsibility, or unable from press of business to take the trouble, send the case to one who will, for you have before you for treatment a patient destined to live in spite of the grossest negligence, but whose future happiness and usefulness alike depend upon the care and fidelity of some one who for years shall enforce those simple rules of life, and adapt with care and accuracy the necessary appliances.

I can well assure you, gentlemen, that highway robbery were a much more honorable mode of obtaining wealth, than by careless diagnosis, procrastinating measures, or insufficient treatment, to rob a child of the slight chance of reaching that normal physical development, which is a prime requisite for maintaining his physical, mental and moral symmetry.

The history of the case will vary according to the variety of the disease. It is not intended to give a classification of these varieties, therefore it will suffice to mention all the symptoms

likely to occur, premising that the absence of symptoms, or the inversion of their order, does not preclude the possibility of spinal caries.

A prodromal period, or period of incubation, is to be expected. During this stage, which may date from some sickness or injury, or may arise without any assignable cause, and be of several months' duration, the patient shows an indifference to his ordinary amusements and an unnatural fretfulness. He may become awkward in his movements, stumbling in his gait, or assume unlikely attitudes. There may be constitutional symptoms, as loss of appetite, anaemia, and a rise of temperature. There may be nervous symptoms suggestive of paralysis, as weakness, numbness, or tingling sensations in the lower extremities, with irritability of the bladder. If the disease is high in the column, gastric irritation, with a sensation of constriction of the chest. If upper cervical, difficult deglutition, choreaic movements of muscles of the neck, numbness of the arms, and laryngeal cough, or a choking sensation.

Pain is one of the most unreliable of all the symptoms. It is generally located anywhere, rather than at the seat of the disease, and many patients are entirely free from it. It is thought to be caused by the irritation of the spinal nerves at the point of their exit from the foramina, and is referred to the ultimate termination of those nerves. When it occurs it may be constant, if local; intermittent, if remote from the spine; and be increased by fatigue or sudden jar. Acute pain is suggestive of a suppurative inflammation, while a dull ache is more characteristic of dry caries. The location of the pain indicates the location of the disease. If thoracic, the disease is cervical. If in the abdomen and lower part of thorax, the disease is thoracic. While if through the thighs, the disease is lumbar.

A satisfactory history of the case having been taken, the patient is to be stripped and inspected. Flexion of the spine is avoided, and a constant effort made by the patient to support himself. He leans upon the furniture, rests his hands on his thighs, or lies across some object. His movements are constrained in order to avoid jar. He shuffles in his gait. From reflex muscular spasm there may be a partial flexure of the thighs, and a

local stiffening in the portion of the spine affected. Torticollis may occur. The head may be thrown back, and the shoulders raised. The respiration may be grunting in character, with limited motion of some of the ribs. The first evidence of the location of the disease visible to the eye may be a slight flattening of the normal curves of the spine, with stiffening of the affected part, an indication of little value in young children when the curves are not developed. There may be a slight bulging, or a slight lateral angle in the line of the spinous processes at the diseased point, and finally, as the commencement of the deformity, there is the formation of a knuckle produced by the tilting up of the spine of the vertebra whose body is most eroded.

Follow the inspection by a physical examination to establish the diagnosis and locate the disease. Let the patient jump down from a slight elevation, as a low stool. This concussion may produce a cry of pain, a slight confusion of ideas, the child looking surprised, or even a fall. Another method of producing the same result is to press down on the head and shoulders, producing a cry and muscular spasm. These are both rather dangerous experiments. Rubbing the back briskly with the knuckles makes the vertebral spines stand out in red spots. This may assist in detecting any displacement. Pain may be produced at the point of disease by percussion, firm pressure, compression of the chest, crowding the heads of the ribs against the diseased vertebra, a piece of ice or a thimbleful of hot water passed down the back; and lastly, by lateral flexion of the spine, the patient lying on his face, and the body being grasped by the pelvis and shoulders. If, with the patient standing erect, the palm of the hand be placed against the suspected region, and then the spine bent in various directions, any local stiffening can be detected, the neighboring healthy parts being felt to move. The heat of the inflammation can sometimes be detected by the hand or by the surface thermometer. There may also slight diffuse swelling. If the patient has pain of any sort, impeded respiration, or any uncomfortable sensation, lay him across the knees, on a table, or place him in a spiral swing and make firm gentle extension or partial suspension. Observe if his symptoms are relieved. If he gives a sigh of relief and breathes freely while there is a cessation of

his pain, and if the reverse of these maneuvers, by pressing the diseased bones more closely together, aggravates his symptoms, the diagnosis may be considered as fully established, and a plan of treatment adopted.

There are cases where the first symptom noticed is the knuckle of the commencing deformity, and others where paraplegia or abscess may occur without deformity. In obscure cases where the direct diagnosis is difficult, or in any case where especial accuracy is desired, the following table for differential diagnosis will be of service. Error is case of some of the diseases mentioned is much too common, and an occasional reference to such a table, though it be far from exhaustive, will be a valuable aid to the memory:

TABLE FOR THE DIFFERENTIATION OF POTT'S DISEASE.

POTT'S DISEASE. Prodromic stage....	STRAIN OR CELLULITIS. Absent.	Hysterical SPINE. Absent.	MYCULAR RHEUMATISM. Absent.	COXARUM MORBUS. Months in duration.
Motions and attitudes....	Show a stiff back.	Natural.	Not character- istic.	Suggest trou- ble in one leg.
Pain inter- mittent....	From motion with local tenderness.	Very sensitive at a few points to a light touch.	Not local, at one point.	In leg.
Pain con- stant....	Increased by pressure.	Patient writh- ing in pain.	Motion pain- ful.	In leg.
Stiffness	Local.	Absent.	Absent.	Of hip.
Jar and pressure....	No effect.	Give varying results.	Negative.	Aggravate symptoms.
Extension....	No effect.	No effect.	Negative.	Relieves symptoms.
Early de- formity....	Angular.	Absent.	Negative.	Lengthening of leg.
Paraplegia....	After deform- ity.	Absent.	Negative.	Absent.
Tumor....	From abscess.	From abscess.	Negative.	From abscess.

Torticollis.—If from cervical caries the patient supports the head with hand. Palpation detects thickening and tenderness of vertebra.

Superficial Caries.—Constitutional or traumatic causes, abscess, no deformity.

Aneurism of Aorta.—Deformity slight, not angular, signs of aneurism.

(Other Tumors.—Either inter-thoracic or abdominal; deformity not angular; physical diagnosis of tumor.—Dr. E. W. Andrews).

Disease of Kidney.—Differentiate by the urine.

Lateral Curvature.—Deformity not angular; no stiffness.

Rachitis.—Deformity not angular; affects other portions than the spine.

Muscular Weakness.—Deformity obliterated by lying down.

Hernia.—Sudden disappearance of tumor, with absence of spinal symptoms.

Paraplegia.—Without deformity may be ascribed to Pott's Disease if there are spinal symptoms and no other assignable cause.

Diseases of Childhood.—With a long prodromal stage are to be differentiated by the concomitant symptoms. (Acute, with local pain, to be differentiated by the concomitant symptoms and the results of treatment.—Dr. Graham).

Authorities.—Bauer, Brodie, Paget, Sager, Shaffer, Shaw, Taylor, and others.

Theories of treatment and facts of general science can be stored in text-books; they may be held in memory, or, when needed, sought by reference, as is most convenient; but it is the duty of the student, ere he becomes a practitioner, to become at least tolerably expert in the snap diagnosis of common diseases, if not invincible in exact diagnosis.

How are these powers to be acquired? By only one process—by the study of disease; by noting the gross appearance of disease as well as its most minute features; by clinical practice, supplemented by careful reading, and by acquiring the greatest possible proficiency in all those methods of physical exploration, without which scientific medicine would be an impossibility. Many a young graduate enters the sick-room of his first patient with trembling and abject fear. He has learned to auscultate and percuss with an instructor at his elbow, and to listen by the bedside in the hospital to an exact description of a patient's symptoms, but to interrogate and examine a patient with a view to identifying his disease and relieving his sufferings, is a thing to him as strange as were mounted horsemen to the American aborigines.

At the commencement of one's course, if he could learn the practical duties of a nurse and accustom himself to attendance on the sick, he would have done far better preliminary work than if he had mastered every department of natural science, for then the clinic would be real practice, the didactic lecture an illumination of intelligible pictures and not a weird phantasmagoria of the

unreal. While the work of pathology would become the survey of old battle fields, the study of the historic part which is to fit him for coming victories,

In conclusion, let me quote my honored teacher in anatomy, Dr. Oliver Wendell Holmes, who, from the eminence attained by a life of philosophical labor, sends down this clue to guide the student groping among the underbrush of routine study: "I would not undervalue the branch I teach. I recognize the incidental importance of all the subsidiary branches which form a part of the curriculum of this and other schools. Do full justice to these, or you will not, probably, do justice to your more immediately practical studies. But your hardest study must be at the bedside. To go hastily from the library of old books and the laboratory of new experiments to the bedside of disease, is imitating the presumption of those rash profligates who, as Thomas Barton says, think they can take a 'leap out of Delilah's lap into Abraham's bosom.' "

ARTICLE III.

IRREGULAR OR HOUR-GLASS CONTRACTION OF THE UTERUS.

By E. S. MCKEE, M.D., Late Clinical Assistant to the Hospital for Sick Children, Great Ormond street, London, England; Assistant Physician to St. Mary's Hospital; Assistant in the Gynæcological Clinic, and Adjunct Lecturer on Gynæcology, Medical College of Ohio, Cincinnati.

My attention was recently directed to this subject by the following case:

I was called October 8, 1883, to see Mrs. W., No. 20 Gano street, a strong, healthy colored woman, aged 35, married seventeen years, a septipara.

She had, four hours previously, been delivered of a foetus quinquestris, under the charge of a midwife, who said: "The afterbirth did not come away very quick, so I pulled on the navel string, and it broke; then gave a dose of ergot; waited an hour. It did not come, so I gave another dose; still it did not

come, so I thought I had better send for a doctor." The woman had no after pains, nor had she had any of consequence since the delivery. On vaginal examination, I found the pelvis normal, the vagina considerably elongated, so that it was difficult to reach the cervix.

The os was patulous, and the cervix flaccid. Passing my finger on up through the cervix, I met with a constriction about the region of the os internum; and placing my other hand over the abdomen, I found the fundus above the umbilicus, high up, hard and firm. After some difficulty I found what I considered a constriction about the middle of the uterus, the upper and lower parts being equal. Fixing the fundus uteri firmly in the palm of my external hand, I forced the index finger of the other through the stricture and felt the placenta, though there was no trace of the cord, it being extracted stump and roots. The mid-wife had pulled too hard at the bell-rope, and it came away, leaving only the bell behind.

I tried faithfully for a considerable period to get my hand or fingers behind the placenta, but owing to the highness of the uterus and the firmness of the constriction I toiled vainly, utterly unable to accomplish more than to jog the terminal phalanx into the placenta. There having been no unusual haemorrhage, nor any indications of such, and the woman suffering only from the pain incident upon my efforts to extract the placenta, I gave her $\frac{1}{4}$ gr. morphia, and returned to my office near by, leaving instructions to be sent for if anything should happen. At 12 midnight, three hours later, I saw her again. She had been sleeping quietly ever since my departure, and had been hoping that I would not return to hurt her more. Again for the space of half an hour I worked, with the fundus in one hand, the other trying to gain entrance through the stricture. Here, as before, I tried dilatation with the fingers, separating them as one would a pair of shears, but neither tact nor force were equal to the situation. The afterbirth had been in utero now more than eight hours, so I resolved that it must come out. Having put the woman thoroughly under the influence of chloroform, I again went up into the womb. This time I found the stricture some-

what relaxed, though still there. Being free from the evasive, squirming movements of the woman, caused by the pain I gave her, I succeeded in getting my hand into the cavity of the uterus, and in removing a portion of the placenta without great difficulty. The remainder, however, I found firmly adherent to the uterine wall, and it was with considerable effort that I succeeded in removing it. A small portion I found to be so firmly attached, that I thought it inadvisable to use the amount of force required to remove, and reluctantly left it behind. But a slight amount of blood came away. I left the woman sleeping quietly from the effects of the chloroform.

On the morning following I visited her, and found her feeling all right, with the exception of some soreness from my manipulations. Temperature normal. As a precautionary measure, I gave her an intra-uterine injection of carbolized water, 1 in 40. This was continued, and the case kept under observation for six days. There having been not one untoward symptom, it was dismissed. The hygienic surroundings were miserable, and the easy recovery to me a great surprise.

Synonyms.—Hour-glass contraction of the uterus, probably better termed irregular contraction of the uterus, also stricture of the uterus, encystment, incasement, or inclusion of the placenta, or hernia of the after-birth, is called by the French *chatonnement enchatonnement*, and by the Germans *mutterkrampf* or *uterus strictur*. The term hour-glass contraction, which has been so long in vogue, has been discarded by a number of obstetricians. One of them claims: "There is, in my opinion, no such thing as hour-glass contraction. One finds no such thing as the contraction of the transverse zone of fibers represented in the diagrams in the books handed down by tradition, and accepted without dissent by the later authors."

While irregular contraction is a more general term, yet I must maintain that to a few cases, probably a very few, the old time-honored term, "hour-glass contraction" describes the situation more accurately than any other. It is true that the cavities may not be exactly equal, and that the "sand" may remain in the upper cavity more than an "hour," in fact sometimes making it an "all day glass," or, possibly, an "eight day glass." Yet

it is as good as the average medical simile. Better than "pelvis," for who ever heard of a basin without a bottom. There have been too many carefully recorded cases by too many careful, able, and honest observers, to throw the term aside lightly, as being without foundation in fact.

Varieties.—M. Stoltz, of Strassburg, an extensive writer on this subject, has described four distinct varieties, viz.:

- I. A spasmotic contraction of the os tincæ.
- II. That of its internal orifice.
- III. That of one or more portions of the body of the uterus.
- IV. A spasmotic contraction of the whole body of the womb.

Many authorities deny the presence of the first variety on account of the flaccidity of the cervix uteri after the birth of the child. They also think that if it did occur, it would be of short duration.

According to M. Guillemot, the second variety is the true hour-glass contraction. He says: On introducing the hand, the cervix is found projecting into the vagina disfigured, so as to resemble a large intestine. Above this five or six inches, is found the wrinkled and contracted orifice. The cavity of the uterus containing the placenta is found above the contracted part with the uterine walls, in some instances, firmly contracted around the placenta, in others, in a state of complete or partial inertia. In general, the upper portion of the uterus is contracted on the placenta, then that portion seems to be no larger than that below, which often leads to the error that the contraction is in the middle of the uterus, that is, above the os internum. In the majority of cases, the placenta is found in the upper portion of the uterus, but in some it is found strangulated in the stricture—one part in the upper cavity, the other in the lower. This constriction of the placenta by the constriction of the uterus may leave a small, a half, or a major portion below the stricture. As for the third variety, it is claimed that the uterus contracts accurately on a body within its cavity, hence on the placenta. Thus, where the walls meet with no resistance from the placenta, as off its borders, they come together, and we have inclusion of the placenta, which may be incasement or encystment. In encystment, the placenta is imprisoned on all sides by the walls of the

uterus. In incasement, the uterine walls contract on the circumference of the placenta and form a collar or frame. This variety may be partial or complete.

The fourth variety is fully explained by its name, and has been written up by Stolz.

Frequency.—Collins* reports from the Rotunda Hospital in Dublin, 66 cases of retention of the placenta requiring the introduction of the hand. Nineteen of these were from irregular action; 6 out of the 66 died, each of the six had retained placenta from irregular action.

Burns says: "In almost every instance this contraction took place where there was flooding. He scarcely ever introduced his hand into the uterus without meeting with it, whether the placenta had or had not been expelled."

Robertson says: "In all my practice, consisting of upwards of 1,200 cases, I have never met with a case resembling hour-glass contraction. I have been called several times by my professional brethren where the placenta has been incarcerated in the uterus and os closed."

Campbell says: "I never met with an hour-glass contraction, and think it very rare, or does not exist at all."

Braun says: "Abnormal adhesion and hour-glass contraction are more frequently encountered in the experience of the young practitioner, and they diminish in frequency in direct ratio to increasing years."

The ante-partum variety of the hour-glass contraction is even more rare than that which occurs post-partum. This rarity is demonstrated by the fact of its almost entire absence from the text-books. Dr. Baltzell, who has the credit of having recorded the first case, says: I have never read, heard of, nor met with a similar case in the course of my obstetric practice." Prof. Reamy, my honored teacher, concludes the excellent report of his cases as follows: "Its rarity may be seen by reference to the fact that not a case occurs, as far as I am aware, in the reports of either the London or Guy's hospitals since the foundation of these charities." Stiles reports that he had never heard of it,

* For references see Bibliography.

nor was he able to find any one among his neighbors (Leavenworth, Kansas) who had seen or heard of it. It is claimed by some to occur more frequently in twin pregnancies than single births.

Dr. T. C. Smith, in an admirable article, records 30 cases of ante-partum hour-glass contraction, and mentions three others as doubtful cases. Since the table was published, I have been able to find four * other such cases, making 34 in all, with three doubtful cases.

Aetiology.—The use of the cord as a bell rope or fishing line with which to draw out the placenta. This pulling and hauling at the cord results in its separation if there is much resistance, or in the production of spasmodic contraction of the whole or portions of the uterus by the movements of the cord upon it.

The same may result from the introduction of the hands or instruments of the accoucheur, especially if they be cold, or some other irritation of the uterine muscles. We must conclude from the data furnished us, that a disproportion between the presenting part of the child and the pelvis of the mother must be a cause. It retards labor and gives more opportunity for the spasm. It also elongates the cervix, thus expending the longitudinal force of the uterine contraction. Other causes may be, sudden emptying of the uterus, as in precipitate labor; after tedious labor, the uterus being exhausted and incapable of regular contraction; following the improper use of ergot of rye; after the birth of twins, or where there was present a large amount of liquor amnii, and great distension of the uterus; premature evacuation of the liquor amnii. According to Stoltz, the disposition exists in the organ. Simpson mentioned as a cause the prolongation of the first stage. Simpson thought it caused by the effort of the womb to recover the normal state. Levret thought that that part of the womb which corresponded to the placenta remained in a state of inertia, the other parts contracting. Plessman thought those

* Prof. Beamy, during the writing of this article, in delivering a woman before the class in the Medical College of Ohio, met with an ante-partum hour-glass contraction involving the internal os. It was ten hours in duration, and necessitated the use of the forceps. He had delivered the same woman before the class on a former occasion, and was obliged to do the high forceps operation. The woman is set 32 a quart-ipara, and has a conjugate diameter of only $3\frac{1}{4}$ inches. The mother and child both survived.

parts of the womb which press directly on the child are more highly irritated than those which press on the placenta, hence they contract sooner. Peu thought it due to a peculiar conformation of the uterus; Leroux and Kok, that it depended on the rupture of the nerve filaments. In a woman who died at the Hôpice de l'École, Velpeau found the uterus moulded upon the placenta so that it was divided into five shallow cells which evidently depended on protuberances formed by the corresponding cotyledons of the afterbirth. Baudelocque claimed that hour-glass contraction was caused by that portion of the uterus which was around the child's neck being only momentarily distended by the passage of the child, and then again contracting. Meigs, Douglas and Ramsbotham count placental adhesion as the principal factor in the hour-glass contraction. Ramsbotham says adhesions of placenta occur more frequently among the lower classes, because occasioned often by a blow or injury received during gestation, hence we may look for hour-glass contraction oftener among them. Meigs says the placenta acts as an antagonist to that part of the womb on which it rests. That part below has no antagonist, and it contracts and shuts the placenta in. He says further: "I have never yet met with a case of hour-glass contraction in which I was not compelled to separate the placenta with my hand. I cannot well conceive of an hour-glass contraction independent of preternatural adhesions of the afterbirth to the womb."

Dr. Douglass says "the placenta is always found adherent to the uterus."

"Duncan says: "Hour-glass contraction cannot exist unless the parts above the constriction are in a state of inertia; were the higher parts of the uterus in moderate action, hour-glass contraction would soon be overcome."

Nicholls observed the frequent occurrence of difficult labors among the wives of Irish peasants who were compelled to endure great physical labor. They were obliged to carry on their backs in creeds turf from the bog, manure from their cabins to the fields, and stones from the fields to be broken for road-making. With those heavy burdens they are obliged to stoop forward,

causing the abdomen and uterus to become more prominent than normal. He observed in these cases a partial suspension of labor, the gradual escape of the liquor amnii, the uterus narrowed and lengthened, so as to assume a long oval shape rather than a globular one, and subsequent hour-glass contraction. "After seven years meditation" he fortunately "hit it off." He arrived at the conclusion that the child's head forced the cervix uteri against the pubic arch, arresting the descent of the uterus and the dilatation of the os. By and by the waters began to escape, and the uterus, unable to contract longitudinally, contracted in its circumference on the body of the child. The legs then became extended, and the uterus moulded itself on to the body. Hour-glass contraction and retention of the placenta followed.

Scanzoni thought, "because of the rich nervous supply to the uterine fibers of the os internum, it is irritated by the advancing head, and spasm occurs."

Macdonald gives as a cause in his case, a neurosis affecting the parts, due probably to the fact that the patient was an epileptic. In fact, something analogous to a vaginismus.

Prof. Heile has demonstrated the existence of bundles of fibers running obliquely from either side of the body, anteriorly and posteriorly to the fundus. He says that spasmotic contraction of the fibers would divide the uterus into two compartments, one of them being the infundibulum, the other the remainder of the cavity. This being the case, the possibility presents itself of the arrangement of uterine fibers not being the same in all uteri; i. e., the existence in some of circular fibers.

Lusk says "a special reinforcement of the muscular fibers around the internal orifice of the cervix, constituting the so-called sphincter, is admitted by most anatomists."

Briggs, in a most complete and excellent article, goes thoroughly into the anatomy of the internal os and the causation of hour-glass contraction, more especially the ante-partum variety. He says the wound consists of three bands of muscular fibers, a longitudinal, a transverse, and an oblique, intimately combined with connective tissue and elastic fibers. The transverse or circular fibers aggregate at or about the internal os, and form a

sphincter. To them we must look for the efficient factor for the deformity in question.

Curten, in a Cæsarean section performed by himself, saw a sulcus transversus come and go in the uterus. This sulcus on the external surface was evidently due to contraction of bundles of transverse fibers in the middle of the body, for after the uterine incision had been closed there was noticed an irregular gaping of its edges at the time of the formation of the transverse groove. A spasmodic contraction of the uterus that could have produced this shallow furrow, could have undoubtedly produced a marked hour-glass contraction of the body of the uterus. There was no abnormal alteration of the tissue of the uterus.

The views of Bandl, "that during the latter months of pregnancy a new cervix uteri is formed, composed of the segment of the uterus, the upper part of the vagina, and the cervix uteri proper," which were presented to the German congress of physicians in 1876, have not been confirmed by others. On the contrary, they have been controverted by many distinguished investigators. He did not find a single supporter to his theories in the association where they were promulgated. Müller did not accept them, and Macdonald, in his unanswerable logic and array of facts, has since completely wrecked the whole idea. Others from all parts of the medical world have risen up to proclaim him in error.

I regret to mention this, for to the author of this theory I owe much of what little I know of gynaecology, having been with him in the Poliklinik at Vienna, and a witness to his skill as a clinical observer.

Diagnosis.—The placenta not coming down as it should after the delivery of the child, if traction on the cord is employed it is found that it does not descend, but instead it lengthens from elasticity, immediately retracting on release. This shows that it is made fast above. Should this traction be continued, rupture is the consequence. If the hand is passed along the cord, the examiner will, in the true hour-glass contraction, find the external os patulous and flaccid, often distorted, readily admitting the finger up to the internal os, where he meets an obstruction, com-

plete or nearly so, to further progress. There is, possibly, a large or small part of the placenta below the constriction, or it can be felt by the finger tip above the stricture. It may be distinguished from the uterine walls by the vascular ramifications, the softer feel, the elevation above the walls of the uterus, the (to the patient) duller sense of the accoucheur's touch upon it, in comparison with that upon the uterine walls, and from bimanual examination the increased thickness.

Internally one feels that part of the uterus above the constriction hard and firm. This also can be felt externally, and in many instances the constricting band can be made out. The uterus is high up in the pelvic cavity, and elongated, its transverse diameter being diminished, contraction rarely occurs at the external os, and may occur at any other portion of the uterus.

Pains and flooding are usually absent. As an additional means of diagnosis, the writer would urge upon the profession the importance of abdominal palpation. When an hour-glass contraction exists, an expert diagnostician should be able to make it out through the abdominal walls; as aids in this department are recommended: "The Diagnosis and Treatment of Obstetrical Cases by External (abdominal) Examination and Manipulation," and "Minor Surgical Gynaecology," both the authorship of Paul F. Mundé. Not only should the sulcus be detected by external manipulation, but also whether the uterus is contracting in the normal globular form or in the long, oval condition, betokening hour-glass contraction. In case of retained placenta, a bulging at that part of the uterus containing the placenta is palpable. Pains seem to have little or no effect. Pains in the sacral region and in the neighboring organs, the bladder and intestines, colic, tenesmus, and nausea occur. Should all other means of diagnosis fail, let the practitioner get his hand within the spasmodic grasp of the uterus, and he will think he has met an old classmate. The grip is terrific. Dr. Reamy says: "I willingly withdrew my hand, so painful was the grasp. If the constriction had surrounded the neck of the child, it could not have survived longer than if it had been suspended with a noose around the neck."

Dr. Nichols: "On very many occasions my hands have been

nearly powerless for days from the long and severe pressure they were subject to in overcoming hour-glass contraction."

Prognosis.—In this statistics do not come much to our aid and we do not know much about it. One cannot easily prognosticate the result when nature clouds her future in such doubtful dimness. In the 33 labors in 30 women, where ante-partum hour-glass contraction occurred, reported by Smith, we find the appalling mortality of 8 mothers and 28 children; 3 mothers died undelivered; only 7 were stated as primiparæ. Of those who died, 4 were primiparæ. In one case the mother had gone through 13 deliveries.

Treatment.—First, remove the spasmodic contraction, then remove the placenta if retained. Time alone will sometimes remove the constriction, though it may permit its increase.

If there are no contra-indicating complications, as haemorrhage or lapse of time, one may simply wait. After 6 or 8 hours have elapsed, however, it is better to commence active measures. Frictions on the fundus uteri are often effective. One may try to dilate the constricted orifice by inserting two fingers and opening them as a pair of shears, and by firm, steady and continued, yet slight, force overcome the spasm, or, as it were, wear it out. As a preparatory measure, the fingers may be smeared with unguentum belladonnae. Simpson recommended chloroform, which is much in use in Scotland. King asserts that it is not affected by anaesthetics. In attempting to introduce the hand into the uterus, it should be placed in the most insinuating position in the shape of a cone. Opiates, decoctions of belladonna and hyoscyamus are recommended.

Dr. Fancourt Barnes recommends inhalations of three drops of nitrate of amyl on a handkerchief. He has obtained excellent results. Dr. Richardson recommends amyl nitrate gtt. iii., ether $\frac{3}{4}$; inhale. Does not produce unconsciousness, but has an opposing force to ergot. In it we have the designated epichontocic agent. Johnson has had flattering results follow hypodermic injections of belladonna, but it failed him once. A solution of tartrate of antimony given in $\frac{1}{2}$ to $\frac{1}{4}$ gr. doses, and repeated every hour or oftener until the patient becomes quite sick and prostrated, has been long in use and very effective, but is

contraindicated in some cases. Fränkel recommends subcutaneous injections of muriate of morphia from 0.015—0.003 grm.; atropia sulph., 1 milligramme. Warm fomentations and irritations to the abdomen; sinapisms, turpentine stupes on hypogastric region; venesection when patient is plethoric; and warm baths. The upright position is favorable in the ante-partum variety. Ramsbotham objects to large doses of opium, saying that they may so paralyze the uterus that it will not again contract. Warm baths are objectionable in that they may induce hemorrhage which might not be readily detected. If a small part of the placenta is below the constriction, it should be pushed up and the uterine cavity then penetrated with the hand. If strangulated near the middle, one should pass the hand up and secure the part above. If the major portion is below the constriction, this should be compressed, thus lessening that above and favoring delivery. To remove adherent parts of the placenta: It is claimed that traction on the cord is sometimes good practice if it can be made perpendicular to the plane of attachment, not horizontal. The simile is the separation of two wet sheets of paper. The separation with the hand should be done by running the finger along as one would tear the uncut leaves of a new journal. Very tightly adherent pieces of placenta may be loosened by a scratching motion of the ends of the fingers. Do not, however, be too eager to remove every bit. Several cases are on record of a fatal result from a too forcible removal of portions of placenta. One may start the detachment of a plate of the inner muscles of the uterus, which, becoming deeper and deeper, may finally lead into the peritonæum, and the usual results follow. The dangers of allowing a portion of the placenta to remain are great, those of forcible detachment are greater. M. Dubroca, of Bordeaux, has introduced a new method, the method of erosion. When it is difficult to induce the dilatation of the stricture, he introduces one finger into the placenta, tearing it up and reducing it to fragments, which are afterwards expelled. He has found this plan useful in cases in which he could not introduce the finger. One may inject cold water into the placenta, through the umbilical vein, with considerable force. This is retained a few moments by compression of the cord, then

released, and the injection repeated. This has an effect both on the placenta and the uterus. If everything else fails, incisions through the structure should be made. Be sure to go sufficiently deep. Better too deep than many shallow cuts. It should be made with long blunt fistula shears. The buttoned bistoury easily cuts the walls of the vagina. Cæsarean section has been seriously discussed as being a resort in the ante-partum variety.

As prophylactic treatment. Avoid every cause liable to irritate the uterus. When antepartal, avoid a too early rupture of the membranes.

2. As far as possible remove all impediments to the expulsion of the child from the uterus.

3. Assist with the forceps, or by turning before the cervix becomes excessive.

After a careful perusal of the above, my readers, I think, will agree with me in the following conclusions :

1. That the good old-fashioned hour-glass contraction, "handed down by tradition," and the writings of many of the best obstetrical observers the world ever saw, still lives. That its occurrence is much more rare than is generally supposed. That the case mentioned in the beginning of this article was one of these rarities.

2. That its occurrence ante-partum, adds greatly to the dangers incident to the mother and child in the parturient act. That this danger on the part of the mother is but slightly lessened in the post-partum variety.

3. The sulcus uteri, caused by the contraction, being diagnosticable, in many cases, through the abdominal wall, practitioners should resort more frequently to this mode of diagnosis.

4. Thinning of the segment of the uterus below the stricture is the exception, flaccidity being the rule.

5. That hypotheses based upon assumed anatomical structure of the uterus and cervix are, at this time, not entitled to the weight of authority. There is a lack of harmony in the opinions of anatomists regarding them. They are unsupported by clinical observations. *Hic jacet* the view of Bandl :

6. A treatment applicable to all cases, owing to the many and varied peculiarities attendant upon each, is at present impractic-

able, and each case must be treated until we are further informed,
p. r. n.

6. Owing to the disheartening mortality in the ante-partum variety, the Cæsarean section is worthy of serious consideration and use, as a means of safety to mother and child, especially the latter.

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It will be noticed what a large amount of the literature is American. Does this betoken more skill on the part of American practitioners as diagnosticians? Or would the remarks of Karl Braun as to the young man be applicable also to Americans?

57 W. 7th Street, Cincinnati.

ARTICLE IV.

CLINICAL AND PATHOLOGICAL REPORTS OF CASES OF INSANITY.

By S. V. CLEVENGER, M.D.. Special Pathologist Cook County Hospital for the Insane.

On the first day of March, 1884, a general enumeration was made from the books of patients who were actually present on that day, with such matters pertaining to them as were of interest in their cases.

The new case books were begun in June last, when every one in the building was sought out and each case recorded, as far as information could be obtained. The numerical results of the work since then may be gathered from the following tables:

	Males.	Females.	Total.
Present June 1, 1883.....	227	273	500
Admitted to March 1, 1884.....	152	161	313
Total under observation.....	379	434	813
Of whom died.....	35	41	76
Of whom were discharged.....	69	68	127
Present March 1, 1884.....	285	325	610

Of whom 40 males and 26 females presented probably curable types of insanity.

Ages.	Males.	Females.	Total.
Under 15 years.....	1	2	3
From 15 to 20.....	6	8	14
" 20 to 30.....	102	96	198

From 30 to 40.....	79	104	183
" 40 to 50.....	63	67	130
" 50 to 60.....	27	37	64
" 60 to 70.....	5	9	14
" 70 upwards.....	2	2	4
	285	325	610

Civil Condition.	Males.	Females.	Total.
Married.....	95	153	248
Single.....	172	126	298
Widowed.....	11	21	32
Unknown.....	7	25	32
	285	325	610

Years when admitted.	Males.	Females.	Total.
1863.....	..	1	1
1866.....	..	5	5
1867.....	2	..	2
1868.....	1	1	2
1869.....	2	3	5
1870.....	3	2	5
1871.....	7	9	16
1872.....	4	2	6
1873.....	5	13	18
1874.....	5	2	7
1875.....	3	7	10
1876.....	7	14	21
1877.....	6	9	15
1878.....	12	16	28
1879.....	7	14	21
1880.....	9	20	29
1881.....	11	24	35
1882.....	51	40	91
1883.....	113	110	223
1884.....	37	33	70
	285	325	610

Nativities.	Male.	Female.	Total.
American.....	81	67	148
Bohemian.....	5	8	13
Canadian.....	6	3	9
Dane.....	..	1	1
Dutch.....	3	..	3
English.....	10	10	20
French.....	2	2	4
German.....	69	72	141
Irish.....	57	103	160
Italian.....	2	..	2
Norse.....	12	11	23
Pole.....	4	8	12
Scotch.....	3	1	4
Swede.....	30	37	67
Swit.....	1	..	1
Welsh.....	..	1	1
Unknown.....	..	1	1
	285	325	610

Races.	Foreign Born.		Native Born.		Total.	Males.	Females.	Total.
	Males.	Females.	Males.	Females.				
Anglo Saxon.....	21	14	33	39	54	53	107	
Celtic.....	56	103	29	15	85	118	203	
Germanic.....	67	63	12	4	79	67	146	
Hebrew.....	4	7	..	1	4	8	12	
Latin.....	6	2	1	..	7	2	9	
Negro.....	..	1	4	8	4	9	13	
Scandinavian.....	42	49	..	..	42	49	91	
Sclavonic.....	10	19	..	..	10	19	29	
	206	258	79	67	285	325	610	

SUMMARY.

Native born Americans.....	Males.	Females.	Total.
Native and Foreign, other nationalities.....	232	286	538
	285	325	610

Occupation.	Males.
Trades requiring skillfulness.....	114
Occupations in which skill is not required.....	134
Merchants.....	6
Professional	3
No occupation	28
	285
Occupation.	Females.
Housewives.....	142
Domestic.....	87
Seamstresses.....	12
Actresses.....	7
Teachers.....	4
Clairvoyant.....	1
Unknown.....	77
	325

In the list of psychoses Spitzka's classification has been adhered to as the most scientific one in existence. America has reason to be proud of having originated an alienist who has brought order out of chaos in these matters, and the deeper the asylum physician delves into his cases and compares them with Spitzka's work on insanity, the more will he appreciate the clearness and profundity of the classification as well as the entire subject matter of his book.

I have found it convenient to designate acute from chronic forms of mania, melancholia, etc., as the terms possess something of a prognostic value. In former clinical reports I mentioned monomania as a misnomer, and suggested that a name conveying the idea of logical perversion would be more appropriate for this disorder. Since then I have encountered the term paranoia, as used by Giuseppe, Amadei, and Silvio Tonnini, for this form of insanity, in the Nov. '83 leading article of the *Archivio Italiano per le Malattie Nervose e Alienazioni Mentali*, the organ of the Italian *Societa Freniatrica*, and in the expectation that it will come into general use instead of the word which has caused so much misunderstanding, have adopted it.

Such terminal dementes as possess a modicum of their former mental troubles I have separated off into secondary confusional insane as Spitzka suggests. It forms an excellent link between the chronic and terminal types of insanity.

PSYCHOSES.

	Males.	Females.	Total.
Acute alcoholic insanity.....	4	1	5
Acute hysterical insanity.....	..	1	1
Acute mania.....	12	10	22
Acute melancholia.....	15	10	25
Chronic alcoholic insanity.....	15	3	81

Chronic hysterical insanity.....	...	12	12
Chorotic insanity.....	1	...	1
Circular insanity.....	3	...	3
Chronic mania.....	25	40	65
Chronic melancholia.....	16	25	41
Epileptic insanity.....	31	20	51
Hebephrenia	9	7	16
Idiocy.....	1	...	1
Imbecility.....	6	8	14
Katatonias.....	10	3	13
Paranoia.....	16	6	22
Paretic dementia.....	13	2	15
Primary confusional insanity.....	6	3	9
Recurrent mania.....	4	13	17
Recurrent melancholia.....	1	2	3
Secondary confusional insanity.....	28	60	88
Senile dementia.....	5	7	12
Stuporous insanity.....	3	...	3
Syphilitic insanity.....	2	...	2
Terminal dementia.....	59	91	150
Transitory frenzy .....	...	1	1
	285	325	610

The medical Aristarchus can easily find fault with any aetiological table, and particularly where insanity is the effect produced. It is extremely difficult to arrive at probable causes in the main, from many reasons; among them being the absolute want of all information concerning the insane sent to asylums, (aside from such cases where nothing is known by those who send them here, this is an outrage unworthy even barbarians, for often a hint from friends will materially assist toward the treatment and care of the insane); also the disposition, occasionally met with, to hold information back from the physicians from ignorant motives on the part of relatives, and the general illogicality of the masses.

A large proportion of the insane are sent to us as masturbatory; this and religious excitement are main alleged causes. Both may be repudiated as being in 99 per cent. of cases *effects* of the insanity, and not causes. In some of the cases present I have noticed that hernia not only accompanies the disorder, but is at least an aggravator of the mental derangement, if not a direct cause. Certainly, where coprostasis causes melancholia, as grave an intestinal trouble as rupture may also be reckoned aetiological. In male case No. 123, with complete scrotal hernia, and the delusion that he is to be hanged every day at 10 A. M., it is noticeable that when confined to bed on account of the tumor, his mental condition is much worse. The hernias may be allowed to remain, at least, as tentatively aetiological.

Although alcoholism is an effect as well as a cause of insanity, in my cases, I incline to the belief that the estimate is too low.

English statistics place it at one-half of all cases; French and Russian somewhat lower. Were the exact histories known of those concerning whom nothing could be obtained, fully 30 per cent. of insanity in males would, in my opinion, thus be caused.

Besides this, while alcoholism, as might be expected, is small among females, insanity is in many cases induced in them by the indirect effects of the bane in husbands, fathers, brothers, etc. For example, drunken husbands abuse, starve, overwork, and desert their wives, and one case shows insanity to date from a drunken brother striking his sister on the head with a bottle.

Though anæmia may be due to multiple causes, it may properly be classed as causative, and menorrhagia may be also included as inducing anæmia, though placed among menstrual derangements.

I think that puerperal troubles would show a larger percentage were the histories of old cases obtainable in every instance, and from various reasons, I incline to the belief that most puerperal cases, if not all, were predisposed by heredity. In fact, hereditary taint plays a very important part in mental alienation, and some very interesting deductions may be made from the following tables, which I have preferred to give fully, in spite of minor objections which may be raised against various facts, such as paralysis being accredited as a cause in one case. It may merely have accompanied the insanity, and while we do not know what caused either the insanity or the paralysis, it is safe to assume a cerebral blood vessel had ruptured, and the word paralysis sufficiently points to that probability.

PROBABLE CAUSES OF INSANITY.

SIMPLE PROBABLE CAUSES.

Moral causes.	Males.	Females.	Total.
Abuse by husband.....	...	5	5
Domestic trouble.....	...	11	11
Fright.....	3	4	7
Grief.....	6	6	12
Love disappointment.....	...	2	2
Mental overstrain.....	1	1	2
Nostalgia.....	1	1	2
Poverty.....	2	1	3
Seduction.....	...	1	1
Physical causes.			
Alcoholism.....	43	12	55
Acquired diseases, etc.			
Anæmia.....	5	...	5
Chorea.....	1	...	3
Epilepsy.....	24	15	39
Erysipelas.....	...	1	1
" Fevers ".....	1	...	1

Hernia.....	2	...	2
Heart disease.....	1	...	1
Hysteria.....	...	5	5
Locomotor ataxia.....	1	...	1
Meningitis.....	1	1	2
Measles.....	1	...	2
Menstrual derangements, Amenorrhoea.....	...	2	5
" " Dysmenorrhoea.....	...	5	1
" " Menorrhagia.....	...	1	1
Over lactation.....	...	4	4
Overwork.....	...	3	1
Puerperal.....	...	20	20
Paralysis.....	1	...	1
Puberty.....	2	4	5
Rheumatism.....	2	...	2
Rachitis.....	...	1	1
Senility.....	4	7	11
" Sickness ".....	1	7	3
Syphilis.....	2	...	2
Smallpox.....	1	...	1
Spinal caries.....	...	1	1
Scarlatina.....	1	...	1
Scrofula.....	1	1	2
Traumatism, Head injuries.....	23	3	26
" Insolation.....	3	1	4
" Intense heat.....	2	...	2
" Lightning stroke.....	1	...	1
Typhoid fever.....	3	1	4
Typhus fever.....	...	1	1
Inherited Insanity.....	14	26	40
" Congenitally defective mentality.....	3	3	6
" Congenital rachitis.....	...	1	1
" Diseases in general.....	2	1	3
" Syphilis.....	1	...	1
" Epilepsy.....	1	...	1

COMPLEX PROBABLE CAUSES.

	Males.	Females.	Total.
Alcoholism and Syphilis.....	1	...	1
" " Intense heat.....	1	...	1
" " Hernia.....	1	...	1
" " Hereditv and traumatism.....	2	...	2
" " Hereditv.....	1	1	1
" " Opio-phagism.....	...	1	1
" " Traumatism.....	1	...	1
" " Epilepsy.....	1	...	1
" " Epilepsy and hernia.....	1	...	1
Congenital and scarlatina.....	...	1	1
Epilepsy, inherited scrofula, and trichophytosis.....	1	...	1
" and puerperal.....	...	2	2
" " Puberty.....	...	1	1
" " Overwork.....	...	1	1
" " Puberty and hereditv.....	1	...	1
" " Traumatism.....	3	...	3
Traumatism and Typhoid fever.....	2	...	2
" " Insolation.....	1	1	1
" " Puberty.....	1	1	1
" " Fright.....	1	...	1
Hereditv and Traumatism.....	...	1	1
" " Love disappointment.....	1	1	1
" " Senility.....	1	1	1
" " Insolation.....	...	1	1
" " Puerperal.....	...	4	4
" " Dysmenorrhoea.....	...	1	1
Hersitv and puberty.....	1	...	1
Puberty and scarlatina.....	1	...	1
Hysteria and love disappointment.....	...	1	1
Senility and hernia.....	...	1	1
Sickness and exposure.....	...	1	1
Scrofula and hysteria.....	...	1	1
Typhoid fever and hernia.....	...	2	2
Unascertained.....	175	182	357
	100	113	253
	285	325	610

PROBABLE CAUSES CONDENSED.

	Simple—		With Complications—		Total.
	Males.	Females.	Males.	Females.	
Total moral causes.....	13	32	2	2	49
" Acquired diseases, etc	49	37	13	18	117
" Traumatism.....	29	4	13	3	49
" Puerperal and lactational.....	..	24	..	6	30
" Alcoholism.....	34	12	9	2	57
" Menstrual derangements.....	..	8	..	1	9
" Inherited insanity	14	26	7	10	57
" " diseases.....	7	5	1	1	14
" Senility.....	4	7	1	3	15
" Puberty.....	2	4	5	2	13
Total causes.....	152	159	51	48	420
Operative in cases.....	152	159	23	23	357

CAUSES PER CENT. ASCERTAINED PROBABLE.

	Males.	Females.	Total.
Alcoholism.....	22	6	14.
Acquired diseases.....	28	24	26.
Traumatism.....	21	3	12.
Puerperal and lactational.....	..	15	7.5
Menstrual derangements.....	..	4	2.
Moral causes.....	8	19	13.5
Inherited insanity	12	19	17.5
" " diseases.....	3	2	2.5
Senility.....	2	5	3.5
Puberty.....	4	3	3.5
	100	100	100
Insanity largely due to inherited defects.....	29	67	48
" " " acquired defects.....	71	33	52

An important fact seems to have been elicited by the researches embodied in the foregoing tables, and that is: *Females largely inherit their insanity, while males largely acquire theirs.*

The statistics of single asylums must be taken upon their own merits, and many things considered in connection with them, but it is worth consideration that, so far as I have been able to ascertain, fully one-half the insanity in this asylum has been transmitted by diseased parents, and that the males are more apt to become insane without heredity, while the females are more apt to have inherited their mental defects, or this may be read in another way, could the statistics outside of asylums be obtainable: the male is less apt to succumb to hereditary taint than the female, nevertheless the italicized deduction above may remain as it is.

ARTICLE V.

CONSTRUCTION OF HOSPITALS FOR THE INSANE. By Dr. J. C. SPRAY, Superintendent Cook County Hospital for Insane.

It may be laid down as a generally accepted proposition, that an institution for the insane is an hospital, and not a mere place

of custody. The latter function was for a long time looked upon as the chief function of institutions for the insane, and as a consequence structures modeled on prisons have been erected at a large cost, which are worse than useless for the purposes of hospitals for the insane. Since an institution for the insane is an hospital, and treatment is the object of an hospital, everything in its management is only a means toward that end.

Into the treatment of both the sane and insane enters not only the question of medicines and diet, but the influence of impressions made on the mind. As Bucknill and Tuke * have said, "Dyspepsia caused by anxiety is cured by prosperity and content; the dysentery of armies waits upon the depression of defeat, and is cured by the breath of victory." As mental impressions are derived from one's surroundings, it follows that everything connected with an hospital for the insane should be made subservient to the one purpose of treating the inmates, since it has been found by extensive experience that treatment of the insane in specially devised hospitals yields the best results. The patient, who at home is the center of well meant but illy directed sympathy, and in consequence the monarch of all he surveys, becomes, on entering an hospital for the insane, one of the members of a large community, whose surroundings demonstrate to them that they are regarded as sick people, whether they so regard themselves or not. The mind of the insane is so constituted that it can originate nothing but what is tainted by disease. Healthy ideas may be introduced from without, which are stronger in their influence than those originating in the mind of the patient. To introduce healthy ideas, the manner adopted must be such as will not arouse opposition; the healthy ideas must be insinuated into the mind. If the idea be insinuated into the patient's mind by his surroundings that he is regarded as a person to be treated in an hospital for his sickness—insanity—this idea tends to develop self-control, and the development of self-control tends to cure or alleviate insanity. Cases are met with every day of patients treated at home and in an hospital for the insane with exactly the same medicines. Those treated at home, as a rule, die or become permanently insane; the others as

* Psychological Medicine.

frequently recover. Spitzka[†], an impartial authority of repute, says: "An hospital sojourn has, in the vast majority of cases, a good effect on the insane. Curable cases are never injured in their prospects in a medically well-managed institution, and incurable cases should be there for practical reasons, and are better off in than out of an asylum. The advantages of hospital treatment are these: refusal of food and medicines, great obstacles to the treatment of the insane outside of hospitals, are best dealt with by a skillful corps of physicians and attendants always on the spot, with the requisite appliances at their disposal. The necessary supervision of the insane at all hours can be carried on at least expense and greatest thoroughness in the hospital ward. The excessive use of narcotics, and restraint necessary for preventing scandal, noise, and destructiveness at home are not required in the hospital. The sojourn of a patient in a hospital for the insane, and the restraint of its walls, is a constant reminder that he is regarded as insane. It is, in many cases, a far stronger incentive to a kind of reflection which leads to the correction of delusions than any drug."

It is clear then that the greatest effect of hospital treatment is due to the impression made on the mind of the insane patient. If the hospital for the insane be built like a prison; if it be conducted more on the idea of saving money out of the patients than of saving money through curing them, it will damage its patients as much as it would otherwise benefit them. When hospitals for the insane are so built as to impress the patient with the belief that he is entering a prison, such an impression has a very bad effect on him, which tends to make his disease resist treatment otherwise beneficial. If, however, the hospital be built in such a manner as makes the first impression agreeable, the patient is, despite himself, favorably impressed, and this favorable impression is strengthened or diminished as the interior structure or management most resemble those of an hospital or a prison. In the hospitals of the eighteenth century, which were constructed on a prison plan, the insane displayed a fury which would be scarcely credible, were it not that similar pictures are presented from almshouses where the insane, being

[†]Insanity; its Classification, Diagnosis and Treatment.

few in number, are shackled and confined in dungeons. Dr. A. Bennett*, of the Norristown, Pennsylvania, Hospital for the Insane, has had under observation a patient who had been chained in a dungeon, and her food thrust into her den through an opening in the wall, which she must eat as best she could with her hands tied. This patient, a tall, powerful German woman, came to the Norristown Hospital with a horrible reputation for ferocity. In a very short time she became tractable and quiet, and presented an appearance calculated to attract rather than repel. Being asked, why she was so wild in the almshouse and so quiet in the hospital, she replied : "Because they locked me up like a beast. How would you like to be locked up like a beast?" From this case, which could be duplicated thousands of times in the history of the English, French, Italian, German, and other European insane in the eighteenth century, it can readily be seen that the impression made on the patient by the external appearance and internal appointments of an hospital, is a very important element in the treatment. It may, therefore, be accepted as a fact settled by years of experience in England, Ireland, Scotland, Germany, France, Italy, Holland, and the Scandinavian countries, that the external appearance of an hospital should be the most cheerful and alluring possible.

The cell-like construction of many asylums was due to the fact that they were modeled on old monasteries. These cells were intended to secure for pious monks, the very thing it is desirable for the insane to avoid, the opportunity for unwatched solitude. The insane patient shut up by himself alone or with a single companion finds his disordered fancies exercising complete sway over his mind, while the presence of a single companion tends to aggravate these and excite him to violence. The insane patient under such circumstances readily conceives that he is looked upon as a criminal, and this causes either deep dejection or great violence, as the patient is inclined to be sad or furious. If the last, he has combative tendencies aroused by a fancied infringement on his rights, and violent deeds are not unfrequent under such circumstances. It is a matter of every day experience that men

* Journal of the Medico-Legal Society, July, 1883.

who are violent and uncontrollable in an hospital built on the cell plan quiet down and become the most tractable patients of an hospital built on an hospital plan.

The internal construction of an hospital for the insane is, therefore, of no less importance than its external appearance. It is therefore necessary to inquire what system of internal construction has been found to answer best. Prominent among those active in solving the problems of hospital construction for the insane, have been the physicians of England, Ireland, and Scotland. And as Dr. P. M. Wise,* of the Willard Asylum for the chronic insane, New York, remarks, the first thing which strikes a visitor to the institutions in those countries is that in the county hospital for the insane, the single room accommodation rarely exceeds 20 per cent. of the whole. The associated dormitories frequently contain fifty beds or more, with a few single rooms attached for exigencies. Associated dormitories, it appears, are the prominent feature of the hospitals for the insane of countries where most progress has been made in the treatment of the insane.

Dr. Lalor,† of the Richmond District Lunatic Asylum, Dublin, Ireland, after an extended trial of a few associated dormitories, recommended that a "number of long, narrow, unsocial corridors and cheerless single rooms, be converted into large day and sleeping rooms." As a result of this, "far superior means of supervision, of occupation, and of amusement were afforded, while the accommodation for the insane was greatly increased at a small cost." Of these associated dormitories, Dr. R. Boyd,‡ a leading English authority on construction of hospitals for the insane, says: "The abolition of single rooms and cells and the substitution of associated dormitories, is a great improvement, as it does away with the prison-like appearance, which has a depressing effect on those mentally afflicted."

Dr. G. F. Blandford,‡ another prominent English authority, says: "The abolition of solitary cells and the association of patients by night and day, also conduces greatly to their quiet and

* *Journal of Mental Science*, Vol. XVI.

† *Journal of Mental Science*, Vol. XXIII.

‡ *Alienist and Neurologist*, Oct. 1862.

† Reports for 1878-1882.

"well-being," and this is also the opinion of Dr. Mackintosh,^{||} a prominent Scotch authority. Dr. Wise cites these associated dormitories as one of the features in which English, Irish, and Scotch asylums compare favorably with those of the United States. Dr. Pelman,[¶] a leading German authority, bears equally strong testimony to that of Dr. Boyd, and the changes introduced into France, Italy, and the Scandinavian countries are more or less modeled on the examples set by the asylums of Great Britain and Ireland. It may, therefore, be accepted as settled by European experience that hospitals constructed with extensive associate dormitories are best adapted for the benefit of the patients. There are certain objections which are likely to arise as to this dormitory system. At first it would seem as if a greater amount of restraint would be rendered necessary, but in the countries where the system is most followed, in Ireland, England, and Scotland, restraint is reduced to the greatest possible minimum.

Second. The question of adaptation to American hospitals would naturally arise. It does not follow because a thing has been found practicable in Europe that the same will be successful in America.

With regard to this question, Dr. Wardner ** who has had an unwilling experience, caused by the fire in his hospital for the insane at Anna, Ill., says: "These patients have been contented, and the number of escapes has not been as many as in former years. Sleeping in such large associate dormitories seems to have had the effect of keeping them quieter, and with the exception of occasional excitement from epileptic attacks there has not been as much disturbance as would have occurred with the same number of sane people lodged in the same room. Those who had been seriously noisy and disturbed their neighbors, while occupying single rooms or small dormitories, out of consideration for others or in consequence of the restraining influence of numbers and the eye of the night attendant, became quiet and acquired the habit of keeping still, and of sleeping well. In fact, a general improvement has been observed in both mental and phys-

^{||} *Journal of Mental Science*, Vol. XVI.

[¶] *Journal of Mental Science*, Vol. XVI.

* *Alienist and Neurologist*, Oct. 1881.

ical health." Similar testimony is given by Dr. Catlett †† of the Hospital for the Insane at St. Joseph, Missouri, who had a very similar experience. Dr. Kiernan, ‡‡ at one time assistant physician of the Ward's Island New York City Hospital for the Insane, states that the overcrowding of that institution led to the use of associated dormitories, which were attended by good effects, and Dr. Godding, §§ now of the Government Hospital for the Insane at Washington, from an experience at the Taunton, Mass., Hospital for the Insane, is of opinion that associated dormitories for seventy-five patients are not attended by any but good results. It is therefore clear that this system is practicable in the United States. The question of cost is another very serious question to be considered. From the experience of Dr. Lalor, already cited, it is evident that an hospital built on the associated dormitory system costs less than one built on the cell plan.

Dr. I. Ray *** accounts for the great discrepancy in cost between American and European hospitals for the insane by this very element of associated dormitories. He says, "the point which may account for comparative cheapness of construction in Great Britain is that a much larger proportion of the patients sleep in associate dormitories. In Scotland this is especially the case. In the pauper hospital for the insane at Morningside, Scotland, with some hundreds of patients there were only a dozen single sleeping rooms." Taking all the circumstances cited into consideration it follows, First: That associate dormitories act in a beneficial way on the insane, and tend to diminish suicides, since these are committed when the patient is alone. Second: That they are perfectly well adapted for use in hospitals for the insane in the United States. Third: That the cost of associate dormitory hospitals is much less than that of cell hospitals.

If associate dormitories are, for the reasons cited, best adapted to the treatment of the insane, the question of rendering effective these and other agencies in the treatment of the insane nat-

†† Report for 1881.

‡‡ Lectures on Insanity.

§§ Cited by Kiernan Op. cit.

*** Journal of Nervous and Mental Disease 1878.

urally arises. Among the elements which enter into this problem are, the selection and number of attendants. In the New York City hospitals for the insane, a proportion of one attendant to 14 patients has been found to be the lowest number compatible with the proper employment and care of the insane. In the county asylums of Great Britain and Ireland, the preferable ratio has been found to be one attendant to every 11 patients, and it should be remembered that on account of the almost universal adoption of associate dormitories, this proportion of attendants is really much more effective than it would otherwise be since one night attendant, under the associate dormitory system could better supervise 75 patients than one attendant could five under the cell system.

Owing to this large proportion of attendants, restraint in the English asylums is reduced to a very minimal amount, and the increased cost of attendants is very well made up by the decreased opportunities of the patients for destructiveness. If such were not the case, the English rate-payers, who are the governing body of the English county hospitals, and who are by no means inclined to liberality, since they pay for the support of these institutions, would not sanction the employment of so large a number. From the higher standpoint of humanity, the contact of many sane minds, free from the trammels of kindred and under medical direction, with the insane is very desirable, since it tends to introduce sane ideas into minds which are incapable of originating these for themselves. The insane patient readily perceives, as a rule, the insanity of his associates. A curious instance of this kind is narrated by Dr. Spitzka.††† In consequence of his attempts to alleviate the condition of the insane in New York, he became known as the friend of the insane. The courts discharged from hospitals for the insane several undoubted lunatics as "sane." Each of these admitted to Dr. Spitzka that every one of those liberated, except the one making the communication, was a lunatic. The fact that others who claim to be sane, are justly treated as lunatics, naturally leads the insane person to look upon his mental operations with suspicion at times. If he have too few sane minds in constant contact with him, he is, while benefited, rendered somewhat

†††*American Journal of Neurology and Psychiatry*, Vol. II.

secretive, and this secretiveness retards a recovery which would be accelerated by contact with sane minds properly trained for contact with the insane. In the English, Irish, and Scotch hospitals for the insane, not to speak of the German, Italian, French, Scandinavian, and Swiss institutions which follow in the wake, attacks of furious excitement are neither so frequent nor so prolonged as in the American institutions scantily provided with attendants.

This fact is of great significance. Under circumstances which it might be imagined would aggravate the disease, it is alleviated. It is important in this connection to ascertain the qualifications of English attendants. According to Bucknill and Tuke*: "A good attendant ought to be a good observer, to have the natural power of remarking differences between one patient and another, and in the same patient at different times; keen to notice circumstances which distress and those which soothe, apt to remark all signs of disturbance and danger, and all means of influence..... Mere apathetic good humor is a negative quality, if not a disadvantage. An attendant on the other hand should not be fussy, but should gain and maintain influence by constant care and kindness." With attendants in the ratio mentioned and chosen for their possession of the qualities cited, it is not at all astonishing that the English should be able to do so much for their patients, and that the types of insanity frequent in the United States should present somewhat different features, since the entire management of the hospital aims at the treatment of the patients.

It is obvious that in addition to the great frequency of single rooms causing disadvantages, the American asylums have too few attendants. That large associated dormitories in the asylums, containing from fifty to seventy-five patients, should have one night attendant is self-evident. It is also clear that during the day the patients should be brought into contact with as many attendants as possible, since provision for no more attendants than can do routine duties prevents attendants exercising the proper control over their patients, prevents them from inducing the latter to labor, and also renders necessary more restraint than is

* *Psychological Medicine.*

desirable. An overworked attendant can neither be as cheerful nor as disposed to make allowances for the outbreaks of the patients under care as is desirable for their proper treatment; there can be but little doubt that many of the cruelties perpetrated on the insane are perpetrated in institutions too scantily supplied with a sufficient staff of attendants. In the English, Irish, and Scotch institutions attendants much more rarely perpetrate cruelties than in the institutions of the United States, and in more than one instance an explanation of the cruelty is to be found in the fact that the attendant has been left alone to manage too many patients for too many successive hours. A large staff of attendants implies more labor on the part of the patients, less destructiveness, less chance for cruelty, and inferentially a greater number of recoveries. The English ratio of attendants to patients is therefore a desirable one. A question arising out of the construction of associated dormitories is that of how many small rooms shall be provided for exigencies in as close proximity as practicable, provisions being made for the exclusion of sound. There are no very certain data to serve as a guide, but in some American institutions three single rooms to each associated dormitory of twenty-five patients, has not been found to be an excessive proportion. Judging from this, a proportion of nine single rooms to each associate dormitory of seventy-five beds is desirable to meet all possible emergencies.

The important elements in the construction and internal management of an hospital for the insane, then, are: First: A cheerful external appearance; to secure this it would be desirable not to use bars, but gratings on the interior and not exterior of windows. The windows should be large paned, so as to afford as much light as possible. These are less expensive in the end than small panes, and give a much more cheerful appearance. Second: Associate dormitories, with single room provision for about twenty per cent. of the patients, inclusive of the rooms annexed to the associate dormitories. The capacity of the associate dormitories should be about seventy-five, and these associate dormitories should be separate from the day rooms. Dining rooms should be provided with a capacity for one-half or the whole inmates of the ward. Third: Heating of the institution

should be by direct radiation. Fourth: The building should be lighted by gas, as being the most cleanly, and by experience, the least dangerous. Fifth: The number of attendants should be as near the English ratio of one attendant to eleven patients as possible.

ARTICLE VI.

EMBOLISM OF THE AXILLARY ARTERY. By ADDISON H. FOSTER, M.D., Chicago.

The case to which attention is here directed, was one occurring in the practice of Dr. Wm. E. Clarke, of this city, through whose courtesy I was several times enabled to make observations of it. I submitted a report of the same to the Chicago Medical Society in the year 1875, from rather full notes taken at the date of observation, which have unfortunately been since mislaid. The following report is based only upon some memoranda taken at that date and recently found, as also upon the points which were at the time of observation more especially impressed upon my memory.

The subject of the attack was a female, about 35 years old, married, and the mother of several children. She was of rugged family and had enjoyed sound health until specifically infected by her husband; after which she was continually ill and suffered severely with metritis and anteflexion of the uterus. She was particularly liable to precordial distress and irregular action and palpitation of the heart, with accompanying hysterical phenomena.

About a year previous to the occurrence of the embolism a roughness became audible with the first sound of the heart, but with no apparent organic cardiac change.

On the 16th of January, 1874, she was suddenly seized with an agonizing pain in her left arm; most intense in the axilla, at the bend of the elbow, and along the wrist and hand. She complained of cold in the arm, but of no general chilliness, of numbness and defective sensations and inability to move the part.

The surface was cold to the touch and purplish in color. Upon examination no radial, ulnar, nor brachial pulsation could be detected. The heart's rhythm was irregular, with a decided systolic bruit, and the pulse about 90 to the minute. The patient was kept quiet in bed; the arm wrapped in cotton batting, and artificial heat applied in order to maintain a normal temperature. After about three weeks the radial pulse began to return very feebly; it slowly grew stronger, but never attained its former strength and fullness. The pain contained to be severe for about six days and then gradually subsided, with occasional accessions quite sharp but brief in duration.

The surface temperature remained low for months. Desquamation followed in July. The arm remained permanently weakened and of small size.

The patient continued to live in variable, but yet generally poor health, and with very intractable uterine disease. There were occasional cardiac disturbances and consequent apprehension of impending danger to the limb or to life. There were also hepatic derangements of more or less constant occurrence.

On the 29th of October, 1874, a species of broncho-pneumonia invaded the right lung, and in ten days was accompanied with a copious expectoration of offensive pus. The dyspnoea, palpitation, and weakness increased until death occurred on the 15th of November. Unfortunately, the pathological anatomy of the case was not cleared up by a post-mortem examination.

In reviewing its feature it is evident that the embolus was mechanical rather than septic in its nature, and was derived probably from the valvular margins of the heart, as the occluding plug on the arterial side of the general circulation is generally from that source or from clots among the columnæ carneæ.

Accounts of embolism in the upper extremities with recovery, are not numerous. The recovery may take place, as in other parts, by the collateral circulation being promptly established, and by the disintegration or resolution of the embolus.

Literature throws meager light upon the theory that specific poison is the cause of the cardiac lesions, although it may be admitted as possible.

That the migratory plug chanced to lodge in the axillary artery rather than in the left middle cerebral—the more frequent occurrence—naturally prolonged the history of this case, although it is claimed that even in the latter event recovery sometimes results.

An arterial embolus from the left side of the heart without septic properties would rarely account for an abscess of the lung, as a benign subpleural infarction of the lung would not be expected to break down into a large quantity of pus.

A venous embolus of septic or putrid origin would not be anticipated from any known condition of the patient.

It could be more readily imagined that the pus had an hepatic origin, a supposition perhaps not incompatible with the state of the case.

ARTICLE VII.

THE NECESSITY FOR AN AMBULANCE SYSTEM IN CHICAGO. By G. FRANK LYDSTON, M.D., late Resident Surgeon Charity Hospital, and State Emigration Refuge and Hospital, New York City.

To one who has had the opportunity to examine the ambulance system in vogue in New York City, and to compare it with our own faulty and ineffectual police patrol system, the necessity of some more convenient and comfortable plan for the disposal of cases of emergency of various kinds, particularly cases of street accident, is but too manifest; but as there are many who are not familiar with the ambulance and its workings as illustrated by the system alluded to, a cursory survey of the subject may be of interest. The evils which the ambulance system is designed to combat have not been wholly abated by it, even in New York city, but the mere fact of their occasional unavoidable occurrence will serve to illustrate its necessity and manifold advantages. As an illustration of the numerous instances in which a well organized ambulance corps is a *sine qua non*, we will quote verbatim an item from a leading daily: "A few weeks ago a New York policeman arrested a man for drunkenness, who was afterward

found to have been in a stupor caused by a fracture of his skull. Had the officer been fit for his position the man would have been taken to a hospital, instead of a police station. About the same time two Hartford policemen arrested Deacon Dewey, a respectable citizen of Granby, who was jolted from a load of tobacco in a street of the Connecticut capital. The good man's righteous indignation at the imputation of drunkenness has found expression in a suit for \$6,000 damages for the false arrest. The other day a Brooklyn policeman arrested a respectable young married woman who stumbled in the street, and she was separated from her child and thrust into a cell on a charge of drunkenness. Her outraged husband did not discover her humiliating position until in the evening, and she was disgraced by the imposition of a fine before the magistrate released her. If she was sick, as she and her husband affirm, and not intoxicated, a jury would probably award her \$10,000 damages for the indignity she has suffered. The people must be made to understand that it is a costly thing to allow an incompetent policeman to be intrusted with the power to make arrests, and when that fact is thoroughly understood at least 10 per cent. of the police of most cities will be dismissed." Now, it would seem that such strictures upon the police are entirely too severe, and it is just here that our own police patrol, albeit a very useful institution, which has been introduced as a remedy for such evils as accrue from the neglect of the injured, fails of its object. The police patrol system throws entirely too much responsibility upon the officers employed in its operation. We will take, for example, the case of a man who has been found lying in the street or in some out of the way locality. He is unconscious, and may or may not have received external injuries, or have taken liquor, the evidences of which are always sought for (and usually inferred to exist), and often the only thing manifest is that he is a stranger and unconscious. Now, let us consider for a moment what may be the matter with this man. Well, to begin with, he may be merely drunk, or he may have a condition of intoxication superadded to some serious injury; perhaps he has fallen upon his head while intoxicated, and received a fracture of the skull. He may be suffering from apoplexy, uræmic coma, or that condition of mental torpor so frequently noticed as

a post-epileptic phenomenon. He may be under the influence of a narcotic poison, or perchance the soothing influence of the sand-bag ; but in any case he is wholly or partially unconscious, and as before stated, he may have been drinking, the fumes of the liquor tending to confuse the case considerably. I will now ask my professional brethren if it is an easy matter to make a differential diagnosis under these circumstances ? I imagine I hear the answer, " Very difficult sometimes outside of our textbooks," and yet we expect our policemen to make the diagnosis. How natural it is for these officers to relegate the case to the domain of " drunk and disorderly !" They know little or nothing of the other conditions, and most obviously they are likely to see only that with which they are most familiar.

We will suppose that they take up this man, and their taking up is not apt to be very gentle if the odor of liquor be perceptible about the victim ; place him in the bottom of the ordinary vehicle called "the patrol wagon," and jolt him off to the police station ; place him in a cell and lock him up. In the morning the prisoner is found dead, and upon autopsy a clot of blood from a ruptured middle meningeal is found pressing upon the brain. Should these officers be indiscriminately censured for an accident due to their lack of surgical knowledge ? I think not, for who among us but has made even greater mistakes ? The illustration given is no fancy sketch, but is drawn from personal experience. In one instance occurring in the streets of New York City, I saw several officers roughly shaking a man whom I found upon examination to have just recovered from an epileptic fit. He had been drinking and the odor of the liquor led the unscientific minions of the law to assume that he was drunk, his mental torpor being supposed to be the obstinacy of drunkenness. How could these officers be expected to recognize the real condition of the man ? There are, as I have stated, numerous conditions in which such mistakes might be made. We all know the difficulty of differentiating certain forms of coma. Hæmorrhage into the pons varolii and opium poisoning give very similar symptoms, and require careful consideration in diagnosing the case, and if in such a case the patient should also happen to be drunk, the diagnosis would be doubly obscure. The author quoted from the

daily press states that when certain facts are understood fully 10 per cent. of the police force will be dismissed; but looking at the matter from a medical standpoint, the whole police force would have to be discharged, if the ability to differentiate certain pathological states from "drunk and disorderly" was to be taken as a criterion of their capacity. But the municipality pays for policemen, and poorly enough too, and ought not to expect to get medical qualifications thrown in. It is fortunate for the officers that they are paid as policemen, and not as physicians, for the latter are not supposed to have any rights which the municipality is bound to respect. I might remark in this connection, that the policeman is expected to furnish a physician himself in all cases of emergency, particularly at the police stations, and to pay him out of his own pocket. If he fails to furnish a physician, he is liable to punishment, should any mishap occur through lack of medical attention. Should the physician send in his bill to the city, he will not receive the price of the paper it is written on in return. Now this system, or rather lack of system is all wrong. There is but one physician regularly employed by the city for such work, and it is obviously impossible for him to attend to it all. He is overworked and poorly paid. There should be in Chicago, as in New York city, a regular corps of police surgeons, one or two at least for each division of the city. These should have regular salaries, or should be fairly paid for each case, as under ordinary circumstances. In this way, all cases under police jurisdiction, requiring medical attention, could have it promptly and efficiently rendered, and the city would not be continually imposing a special tax upon both policemen and physicians. As a substitute for a corps of police surgeons, a provision might be made by which any physician could be called upon to care for an injured person, and could attend him with the security of being paid for his services.

Very often it would be desirable for a physician to accompany an injured person to the hospital or station to which he is removed by the patrol, but if he does so it is at his own expense, unless he can get some compensation from the patient, which is rarely the case. A regular system of ambulances under the management of the various hospitals is really a pressing want with us.

The ambulances of New York city are under the control of a number of hospitals, each one having its own line, with its corps of surgeons. Some of the most effective work is done by the ambulance attached to the Chambers Street Hospital, this institution being especially designed for cases of emergency, the best of the cases being retained by the staff, and the rest distributed among the other hospitals of the city. This institution uses the telephone from police headquarters. The signal, 5-5-4, is sent to the ambulance stable on Duane street. This calls up the driver, who is then told to drive to the place of the accident, where the ambulance surgeon is met, he having run to the scene while the horse was being harnessed. It takes about half a minute to prepare the ambulance and get under way. About sixteen calls a day are attended on the average. The district covered is not large, but three ambulances are required for the work. The Ninety-ninth Street Hospital ambulance service is not so complete as the others, but it covers more ground than any of them. The district runs from Sixty-first street to King's bridge, on the west side of the city, and from Seventy-fourth street to West Farms on the east side. The station houses in the district connect with the hospital by telegraph. When a gong at the back of the hospital is struck, a similar bell in the building notifies the surgeon. The horse is harnessed, the doors of the stable are thrown open at the same time, and the ambulance is away in two minutes. St. Vincent's Hospital runs two ambulances, and is the most perfect service in the city. One of these gets ready in fifteen seconds in the daytime and is rarely more than a minute getting under way at night. A call bell is by the doctor's bed. This awakens him, while at the same time a weight falls and lights the gas. He hastily dons his boots and trousers, and catching his coat from the rack on the way, rushes for the ambulance. While this is going on a bell strikes in the stable, a weight falls, opening the doors and unhitching the horse; the animal being trained runs under the harness, which is dropped and clasped in an instant, after the fashion of our hose-carts, and the machine is ready to start.

Bellevue Hospital runs four ambulances, and being a public institution, competes with all the others. The Presbyterian Hos-

pital covers the territory controlled by the 59th and 88th street police stations. The ambulance gets under way in one minute after the alarm is sounded. The Roosevelt Hospital covers a district including the 20th and 22d wards. The distances traversed by some of these ambulances is, as may be noticed, sometimes very great. The spirit of competition between the various hospitals is very eager, each surgeon striving to capture the case for his own hospital. Sometimes three or four ambulances arrive on the scene of an accident at nearly the same time. It will be seen that the system is very thorough and efficient, and far superior to our police patrol. Instead of the patient being consigned to the care of police officers and hurried away over the rough pavement in an imperfectly equipped and uncomfortable wagon, he is placed in charge of skillful surgeons, and taken to the hospital as leisurely and comfortably as may be required. We have among us good hospitals, and in sufficient number to be all that is required, and I can see no valid reason why we should be behind the great metropolis in our hospital equipments. To be sure, our public institutions are run by politicians, while in New York the physicians have, at least, the dressing of wounds and the compounding of pills left to their own judgment, but the public may not remain in darkness forever, and we may yet see a hospital millennium even in Chicago. Perhaps, however, a hospital millennium is already with us, for our Commissioners have established the fact that doctors do not need to know anatomy nowadays, especially if they must disfigure the pauper form divine to obtain that knowledge. All that is required is that the medical lights shall be of good Republican or Democratic principles, as the case may be, and that each shall be a power in his ward. If a physician should be so unfortunate as to be connected with a college, and should be so audacious as to teach medicine and surgery, instead of politics, he is at once cast into outer darkness, but should he be able to discourse fluently upon the merits of the various brands of Sp. frumenti, and to control a certain amount of the political rabble, he is a fine fellow, and deserving of all consideration. Woe, woe to the unlucky wight who attempts to take advantage of our abundant material and advance our noble art! There is, I am happy to believe, a simple solution of the

difficulty, and that is, the establishment of hospitals in connection with our medical colleges, a step in which Rush has already taken the initiative. I have made, I presume, quite a pronounced digression, but I am confident that it is apropos of the situation.

125 State St.

ARTICLE VIII.

REPORT OF CASE OF MALIGNANT STRICTURE OF THE DESCENDING COLON. By Dr. J. D. SKEER. Read before the Chicago Pathological Society, and reported by the Secretary.

Mr. F. C., of good family history, and previous good health, suffered from indigestion, constipation or diarrhoea, and general debility, since last September. Nov. 11, stated to Dr. Skeer that he had had no movement for two or three days; mild cathartics were then ordered, but ineffectually.

For the next few days the abdomen remained uniformly distended; dullness in the right iliac region, no tumor or well localized pain, but paroxysmal nervous pain.

Temperature 100°, pulse 76.

The diagnosis was at this time obstruction from hardened faeces at the ileo-cœcal valve, perhaps atony of bowels or spasmodic stricture, possibly organic stricture.

At no time, except just before death, did the pulse rise above 80, or the temperature above 101°.

Mild cathartics were again prescribed, followed by copious injections, containing castor oil, etc. These injections were frequently repeated during the progress of the case, but only about two-thirds of the fluid was returned each time. Morphia was given in small doses at bed-time, to relieve pain, relax spasm, and produce sleep.

On the morning of the 14th he passed a number of small scybala and a volume of offensive gas. Dr. McClure and Dr. Knox, called in consultation during the next two or three days, both concurred in the diagnosis of obstruction from faecal accumulation.

On the evening of the 18th, for the first time, the patient vomited fluid stercoaceous matter, and on the morning of the 19th he died. Post-mortem examination six hours after death, was made of the abdominal viscera. The peritoneal sac contained a large amount of yellowish feculent fluid. The undertaker, in embalming the remains, had perforated the bowels with a trocar in a dozen or more places. The small intestines were congested, and the ascending colon very much distended. Two very small perforating ulcers were found in the transverse colon, but no traces of peritoneal inflammation.

In the descending colon, just above the sigmoid flexure, was found an organic structure, almost closing the caliber of the bowels, leaving a passage the size of a goose quill. All faecal matter which was soluble was thoroughly liquefied, and instead of hardened faeces at point of obstruction, a collection of grape seeds and apple skins, which had acted as a valve, thus preventing the escape of more than two-thirds of the amounts injected.

In regard to the specimen, attention was called to the constricting bands of peritonæum; to the contraction, thickening, and induration of the walls of the bowel; to the circular ulcer above and extending down into the stricture, and to the small caliber of the bowel.

Note.—The above specimen having been referred to a committee for microscopical examination, it was reported at the following meeting of the society that the growth was found to consist of round-celled sarcoma, embryonic cells,—rarely found in the alimentary canal, and exceedingly malignant in nature.

J. H. TEBBETTS, Secretary.

CORRECTION.—In the February issue of this journal, in the original communication of Dr. R. F. Henry, Article III., page 130, fifth line from the top, the word "strengthening" is printed in place of "straightway."

Society Reports.

ARTICLE IX.

CHICAGO PATHOLOGICAL SOCIETY.

Regular meeting, October 8, 1883.

The Society was called to order by the President, Dr. Angear. The minutes of the last two meetings were read and approved. Dr. Fannie Dickinson was elected to membership unanimously. Dr. F. C. Knight was proposed for membership by Dr. G. F. Lydston and the Secretary.

The Society then listened to the reading of a very interesting paper by Dr. H. M. Lyman, on Apoplexy, in illustration of which the author gave a detailed account of numerous interesting cases. In diagnosis one needs to exercise careful judgment: alcoholic intoxication and an apoplectic seizure may coexist. Hysterical women have fallen in an attack of unconsciousness, with resulting hemiplegia, which in a short time may be transferred to the other side of the body.

Apoplexy may be simulated by uræmic poisoning. In apoplexy the temperature first falls, then rises. In treating the worst cases nothing is of avail; in those milder, we may employ leeches, wet cups, general bleeding only when the right heart is involved.

Attention should be directed to the state of the bladder, and the bowels be kept open.

For medication, give moderate doses chlorate of potassium, and watch its action on the kidneys; also tinct. aconite root. In the stage of convalescence, dietetic general treatment, electricity, and massage.

The paper being before the Society for discussion, the President, Dr. Angear, marked his interest in the paper and its subject matter. To the profession the diagnosis of apoplexy is all-important, and in some cases, when so diagnosed, apoplexy had not occurred.

He had not a large experience, but a case seen years ago would bear relating, in which a lady suffering from headache, and reflex pains in the left shoulder and arm, had been treated by her physician for uterine disease, and was suddenly seized with apoplexy and death, the post-mortem revealing this condition. The disease of the brain is partly revealed by these obscure symptoms, disturbances of the mucous membrane, as well as interference in the nutrition of the skin, on account of which bed-sores form quickly. Fatal syncope is often diagnosed as apoplexy. The diagnosis should be carefully studied. In another case, when hastily summoned, he found a man speechless and hemiplegic, the eye natural and senses unclouded, which condition was quickly relieved by an emetic, and the throwing up of a large amount of sauerkraut, beer, etc.; had death occurred the diagnosis would probably have been made of apoplexy, and that of the nervous variety may have really existed.

A member of the County Hospital staff present then spoke of a case of medico-legal interest seen lately. The patient was in coma, hemiplegic, with all symptoms of apoplexy, and had been picked up in this condition on the street. No signs of foul play were noticed. Remained thus forty-eight hours, then died. Post-mortem examination revealed a large blood clot upon left lobe of brain, and a fracture of the skull through the left parietal to the temporal bone. No bruises were visible on the scalp. The cause of the fracture may have been a blow from a sand-bag.

Dr. C. J. Lewis thought Dr. Lyman had given all the points to bear in mind in diagnosis, and briefly related a case of a man whose skull was fractured by a fall in leaping from a window; the symptoms were of apoplexy, hemiplegia, etc. In trephining there was found extensive vascular rupture producing great pressure, although there was but slight pressure from the bone.

Dr. Tebbetts briefly spoke of two recent cases; after which the society proceeded to consideration of miscellaneous business.

The President remarked that as there might be some complaint made during the winter on account of the present location of the society being insufficiently central, and as the present place of meeting had been secured experimentally, he suggested the consideration of the matter at present meeting.

Dr. Lyman moved that the officers of the society be appointed a committee to look up a suitable hall or other convenient place for the society, and report at the next meeting. Carried.

Dr. Lyman's name was, by motion, added to the above committee.

Among those present were Drs. Angear, Beecher, Dobbin, Harper, Lewis, Lyman, Treat, Tebbetts, and several visitors.

The society, on motion, adjourned.

J. H. TEBBETTS, Secretary.

CHICAGO PATHOLOGICAL SOCIETY.

Regular meeting, November, 1883.

The society was called to order by the President, Dr. Angear. The minutes of the last meeting were read and approved.

Dr. F. C. Knight was elected to membership unanimously. Dr. R. J. Curtiss was proposed for membership by Drs. Lyman, Lydston, and Harper.

The society then listened to the reading of an interesting paper by Dr. G. Frank Lydston, entitled, "Some of the Fallacies of Modern Sanitation, with Especial Reference to the Sewage System in Relation to Zymotic Disease."

The subject comprised a variety of topics, and its discussion was not a matter of recent date, but had been under consideration many years, and afforded material worthy of thought to-day. Colleges should instruct graduates in the elements and essentials of sanitary engineering.

The sewage system affords a most potent cause of sickness, and in the large cities the majority of cases of illness come under the name of germ diseases.

The term "modern improvements" he considered sarcastic and incorrect. They served for extension, not prevention, of germ-bearing material. He doubted if there were a single perfect plumber in town. Are water-closets in expensively plumbed residences perfectly trapped and ventilated? The author considered not by any means. The same charge was true, and more especially so, in case of stationary washstands in sleeping rooms. In water-closets, gas always remains beneath the trap, waiting to puff upward when the closet is used and the trap opened. Many varieties of traps were then described, sufficiently to point out the defects of each.

The noxious gases, germ-bearing, may be treated chemically. Solutions placed between double traps answer this purpose. The "germicide," a patented arrangement, was considered good, although imperfect.

In conclusion, water-closets should be detached from the main portion of the dwelling, with a well ventilated passage leading to them.

As concerns stationary washstands, how can the gases be kept below the trap? It was about impossible to do this. The heated air of the room attracts the gases thereto, in direction of the least resistance, and in the sense of smell even there was no protection. Sewer gas was a varying compound, and there was no distinct odor in many cases. Stench was a blessed warning when present.

Cases were cited proving beyond doubt that scarlet fever had been conveyed from house to house, along a street, the germs being inhaled only by those persons sleeping in rooms having direct communication, by means of stationary washstands, with the sewer.

The street mains may be flushed daily. This as done in Paris is valuable.

The ventilating shaft in the house should open into a chimney in constant use, as a warm current is required. No better arrangement could perhaps be devised than the complete detachment of all "modern improvements," in way of plumbing, from the dwelling, and at all events remove all stationary washstands from sleeping rooms. Sewer gas is absorbed by the walls

of a house if porous, just as is "crowd poison" in hospitals and barracks, making them untenable, until disinfected by chlorine gas.

The question arises, how are the cities to escape zymotic diseases as nearly as possible? Clean and keep cleaning the alleys, empty the cesspools and allow the sunlight to penetrate them, but use no disinfectant drugs to cover the stenches; remove the cause and disinfectants are needless.

Finally, in the sick room allow a liberal supply of fresh air, thus deodorizing and disinfecting, but dispensing with carbolic acid and such chemicals.

Owing to the lateness of the hour, discussion by the society was postponed.

The society then listened to the reading of a paper by Dr. R. J. Curtiss on a kindred topic: "The Disposal of Chicago Sewage." An abstract of this interesting paper, to be appreciated, should be fully as complete as was the paper itself. At times very amusing, yet truthful in statistics, and accurate in general statement, the paper commanded the closest attention of the society, and on conclusion the author received, on motion of Dr. Lyman, a vote of thanks of the society. Discussion was again postponed on account of the lateness of the hour.

The society then proceeded to the transaction of its miscellaneous business, and first received the report of the committee on place of meeting. Various locations were discussed, but on motion the society granted committee one month longer, advising it possible, the engagement of a suitable parlor in the Washingtonian Home. Dr. C. W. Earle informed the society that he would secure the above room for the next meeting, but was unable to state whether such arrangement could be made a permanent one.

Among those present were Drs. Angear, Brower, Danforth, Dobbin, Earle, Harper, Lyman, Root, Seely, Tagert, Twining, Tebbetts and a number of visitors.

The society, on motion, adjourned.

J. H. TEBBETTS, Secretary.

CHICAGO PATHOLOGICAL SOCIETY.

Regular meeting, December 10, 1883. The society was called to order by the President, Dr. Angear. The minutes of the last meeting were read and approved.

Dr. R. J. Curtiss was unanimously elected to membership. Dr. J. D. Skeer was proposed for membership by Dr. Tebbetts and Dr. Lyman.

The society then listened to the reading of a paper of unusual interest by the candidate, Dr. Skeer, giving a report of a rare case of intestinal obstruction, followed by the gift of the specimen to the society. A full abstract of this interesting report is omitted, as its publication was ordered by vote of the society.

The paper being open for discussion, Dr. Van Buren briefly mentioned a case occurring in his practice about six years ago. The patient, residing at the Sherman House, by profession a civil engineer, was taken gradually ill, having suffered for five or six days from constipation. Stercoraceous vomiting followed for three or four days almost constantly—partly liquid, sometimes solid. Ice checked, but did not stop the vomiting. The temperature continued below normal; the skin clammy; pulse not at any time accelerated, but below 70. But little nourishment could be given between the attacks of vomiting.

Dr. Van Buren could not tell what caused the obstruction, but thought it was probably not impaction. For treatment, he gave small doses of tartarized antimony, $\frac{1}{2}$ to $\frac{1}{4}$ grain, to relax the system, also opiates, which relaxed spasm, relieved pain, but did not produce much sleep.

Some stimulants were given, but no cathartics. In giving injections, he used a stomach pump with a long rectal tube, alternating large amounts of water, then air, for three days. Still the man kept vomiting. Then came a large free evacuation, and the man fully recovered. Did not consider it a case of pathological obstruction.

Dr. Clark supposed no treatment on earth would have relieved that stricture in Dr. Skeer's case, and saved the man.

Dr. Lyman considered the case one of great interest, and the paper a valuable one; the society should publish it. The specimen should be referred to a committee for microscopical examin-

ation, and thus decide whether the thickening were not of malignant origin. The case reminded him closely of one seen some years ago. A man suffering a year from dyspeptic symptoms, still showed nothing very decisive, and became somewhat emaciated, though without fever, the temperature being below the normal. Dr. Lyman's suspicion was directed to the pyloric orifice of the stomach. The patient sank lower; refused food; obstruction of the bowel obtained, with stercoaceous vomiting for a short time, and he died. A few days before death there appeared, as indicating malignant disease, an oedematous condition of the leg. On post-mortem examination, the doctor found an annular sarcomatous infiltration of the ileo-coecal valve, with considerable narrowing of the opening. The malignant nature of the infiltration was only detected on careful microscopic examination. Dr. Lyman thought the case reported this evening would also prove malignant; he therefore moved that the President be appointed a committee to examine the specimen and report at next meeting. Carried. On motion of Dr. Van Buren, Dr. Lyman's name was added to the committee, and on motion of Dr. Avery, that of Dr. Skeer was added to the same committee.

Dr. Lyman continuing, spoke of another interesting case, illustrating the fact mentioned by Dr. Skeer, "that a post-mortem furnished the best guide in diagnosis in such cases." A little child, born of a healthy mother in natural labor, and in good condition, had had on the second day no passage, as is quite common, but the next day seemed in pain and refused the breast. The temperature was a little elevated, and an anal examination with the oiled little finger passed in full length revealed a narrowness or constriction. An oiled catheter showed the same constriction, and engaged in it, passing to the sigmoid flexure and no farther. Faecal matter clung to the catheter.

Dr. St. John made the same examination, and found the same condition. The bowels became distended, death occurring at the end of the week. Post-mortem examination revealed no stricture at all at any point, but the bowels were widely distended. There had been a slight passage, and the bowel was empty. The large intestine, from the middle of the transverse colon to the small intestine, showed traces of acute inflammation of an erysipelatous

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color, with softening, shreds of exudation outside the intestine, and muco-purulent matter within. The case was an entero-peritonitis, with paralysis from inflammation.

The only assigned cause for this in a healthy child was, perhaps, the accidental fright the mother received just before birth, in saving a two year old child from a fall down stairs. In this case stercoreaceous vomiting occurred before death.

Dr. Skeer then mentioned the case of a large stout man, 55 years old, who had stercoreaceous vomiting for eight days. Partially relieved, he had a second attack, caused by an active cathartic, making two weeks in all, and had a complete recovery. In this case the abdomen was much contracted.

Dr. Angear thought local inflammation of the peritonæum occurred frequently, and unsuspectedly without inflammatory reaction. A man in the army died suddenly. Post-mortem examination showed adhesive bands and old traces of peritonitis, but doubted whether this had caused his death. The doctor assisted at a post-mortem in another physician's practice, recently, of a child sick only twenty-four hours, but had had all symptoms of perforation. Was at school, and had had no doctor. Examination showed the vermiciform appendix bound down to the peritonæum by old bands, and the appendix full of a mass the size of a bean. There was here a small perforation, where matter had passed into the peritoneal cavity, and yet the child had shown no grave symptoms. Dr. Angear thought there might be frequently enough inflammation to do all this mischief and yet not lay up the patient, and he not even feel ill.

Some member inquiring about the methods employed by many undertakers to preserve bodies, Dr. Lyman replied that the material used by the undertakers and injected into the abdominal cavity and intestines through long, sharp trocars, would in a few hours produce appearances of ulceration.

Rectal feeding, announced as a subject for discussion, was next before the Society, and Dr. Robison first detailed an interesting case seen recently, of a young woman 22 years old, under treatment a week for excessive vomiting; well nourished and apparently healthy, no known cause could be assigned, unless from nervous prostration. All the usual remedies having been em-

ployed at the time he was consulted, he simply gave morphia, oxalate of cerium and bismuth, also lime water, but still without benefit, and the patient almost in collapse. The prostration was extreme, hence stopped all medication and gave rectal alimentation, injections of milk, brandy and water, also beef peptonoids, one tablespoonful in four ounces of water at each injection. In a few hours the vomiting ceased, strength began to return, and the patient greatly improved for five days, during which time no medicine or ordinary nourishment was administered; and the doctor thought complete recovery would have followed had not the friends, on their own responsibility, administered castor oil, starting anew the vomiting, and resulting in death in about six hours.

Dr. Van Buren had never placed much reliance upon rectal feeding. This case just cited would serve to create some confidence in the subject. For purposes of stimulation, he considered rectal administration of quinine, brandy, etc., very valuable, as in collapse of cholera.

Dr. Robison then spoke of a recent case in the practice of Dr. Ross, of nervous prostration, in which feeding by the mouth was stopped altogether and rectal feeding continued seven days, when he lost sight of the case, but had subsequent good report of the patient. Dr. Robison was unable to state the form of food used.

Dr. Skeer mentioned a case of gastric ulcer, with the following treatment. For three weeks the stomach was supplied only with white of egg, and rectal feeding employed, consisting of eight ounces of beef tea, and five grains quinine, three times a day. There was no fever and no great thirst, but during the last week considerable hunger between "meals," and the patient was strong enough to have gone down stairs if allowed. The doctor thought life could be prolonged and sustained indefinitely by nutrient enemata. In using quinine, it was well never to use muriatic acid to dissolve the drug, as it will start up an obstinate diarrhoea, as in the case of President Garfield. The bisulphate will dissolve readily, and is almost immediately absorbed. He did not use milk in the rectum, for though the salts and water are soon absorbed, the curd remains as an irritating material.

A visitor then mentioned a case under the care of Dr. Gunn, of a boy with contracted oesophagus caused by swallowing hot lye; rectal feeding had been employed exclusively for a year, no food having been taken into the stomach during that time.

Dr. Lyman had used broth and whey in rectal feeding before the day of beef peptonoids, which ought theoretically to be of great value.

Dr. Angear then in a few words mentioned the conflict in opinion and reasoning between physiologists and non-physiologists in the matter of rectal feeding. The rectal mucous membrane cannot digest albumen, nor change starch into sugar. These substances in the rectum only putrefy, show vibricæ, and decompose. Experiments made in Germany on patients operated upon for hernia, and having an artificial anuses, show that the fluids of the large intestine will digest nothing; food placed there, at the end of a month had undergone no digestive changes, and the sharp edges of fragments of albumen were not rounded off.

Casein, fibrin, etc., are not absorbed, for digestion must first occur.

Fluids are absorbed slowly in the large intestine, about seven ounces in twenty-four hours.

Many do not stop to think how long a man will live absolutely without food;—sixty-three days is the longest time reported. Rectal feeding continued forty days is considered noteworthy, but the patient might live twenty days longer on nothing but water.

The doctor thought peptones produced irritation of the rectum, and inflammation enough to stop absorption, and destroy what little hope there may be left. In cases where rectal feeding has been honestly employed for long periods, food must have passed through the ileo-cœcal valve into the small intestine, and to bring this about, he advised using a long tube, small amounts of food frequently repeated, friction over the abdomen, etc.

Members present, about twenty, and several visitors.

The society on motion adjourned.

J. H. TEBBETTS, Secretary.

CHICAGO PATHOLOGICAL SOCIETY.

Regular meeting, January 14. The society was called to order by the President, Dr. Angear.

The Secretary being absent from the city, Dr. Tagert was appointed Secretary *pro. tem.*

The reading of the minutes was dispensed with.

The society then listened to the reading of a paper by Dr. Angear on "Expectant Treatment."

The paper being before the society for discussion, Drs. C. J. Lewis, Clark, and several others, mentioned cases, and thoroughly discussed the subject.

The society next listened to the report of the committee for microscopic examination of specimens from a case of intestinal obstruction, reported by Dr. Skeer at the previous meeting.

Examination showed the growth to consist of round-celled sarcoma, embryonic cells; it is rarely found in the alimentary canal, and is exceedingly malignant in nature.

About fifteen members were present.

The society on motion adjourned.

A. H. TAGERT, Secretary *pro. tem.*

In the February number of this journal, the name of Dr. W. H. Kane King, of Mt. Sterling, Brown Co., Ill., was accidentally not appended to his exceedingly interesting letter, dated from Chihuahua, Mexico. It chanced to be omitted from the manuscript, and was, unfortunately, not supplied by our proof-readers. We hope to present to the profession further interesting letters from the same fertile pen.

CHICAGO MEDICAL SOCIETY.

The Chicago Medical Society held a meeting on the evening of February 4, 1884. After the usual routine of business had been transacted:

Dr. S. V. Clevenger gave a report of a case of "Paretic Dementia" in a female, whose peculiarities justify a brief synopsis. Kate M., æt. 37, Irish; married; was admitted to the Cook County Insane Asylum, April 12, 1883. She had been very intemperate before the insanity was noticed by friends. October, 1881, furor appeared and lasted three weeks. She remained in St. Joseph's Hospital of this city till a remission occurred, lasting till December 25, 1881, when, as her family state, she had "cramps," which lasted a week. She was then sent to Detroit (Michigan State Retreat), where she remained until the latter part of July, 1882, and little was elicited concerning her last remission, except that she was errabund. The first remission, her friends claim, was complete. Just prior to admission in the Cook County Asylum, delusions of persecution were observed. She exhibited marked paretic symptoms, tremulous oral and lingual muscles from the day of admission. Speech drawling, tremulous; felt extremely well satisfied; had unsystematized delusions of grandeur. She gave little or no trouble till August 30, 1883, when hemiplegia followed a convulsion, and next day she died without having been roused from stupor. It was ascertained that her father had died of "consumption of the bowels," and that her mother at the age of 60 died paralyzed; also that this patient had never borne children, nor had she ever menstruated. An hereditary predisposition was denied. Necropsy eight hours after death; uterus very small, resembling that of a child of 16; left ovary atrophied; os tincæ imperforate; vagina patulous and large. A third nipple, well developed, below the left breast. The brain weighed 39 ounces after preparation in solutions for microscopical examination; hence weights as here given have a relative value only. (The author is skeptical as to any importance attaching to absolute brain weights, and of late years will often omit weighing until the tissue is hardened.) Cerebellum weighed $4\frac{3}{4}$ ounces; each hemisphere weighed within a grain of $16\frac{3}{4}$ ounces. The left side then can be considered under weight. Cholesterin abundant, especially in occipito-basilar regions; right antero-posterior diameter of medulla slightly less than left. Isthmus weighed an ounce; vermis of cerebellum warped toward left side, causing left aspect of the organ to appear

larger than that of the right. Cortex did not pull off with pia mater loose from medullary substance, as noted in some cases by Spitzka. But in many parts of parietal and occipital regions the pial adhesions were sufficient to bring away the outer layers of cortex, imparting the ragged ulcerated appearance to which Rindfleisch called attention. Heterotopia found in anterior parietal region. Cortical pial adhesions occurred in the lowest extremity of the right occipital lobe, with connective tissue proliferations filling widened sulci.

This condition was extreme at base of first frontal convolutions on both sides, fibrous trabeculae clubbed and twisted, extended downward from pia mater, covering four to five square inches, filling interstices left by shrunken gyri and atrophied gray substance. In the white substance, external to the right lobulus cuneus, a cone-shaped area of yellow softening with apex curved forward was found, measuring one inch in length, tapering from three lines in diameter. It was apparently the colloidal necrobiosis of a thrombosed terminal branch of the posterior cerebral artery. The gelatinous contents of the cone were mixed with detritus of the degenerated blood-vessel. Sections microscopically examined, afforded views of kinked and distorted vascular channels often twisted glomerularly. Knobbed vessels were frequent and perivascular spaces more so; some clear, others dotted with granular masses. Evidences of capillary stasis, general and decided, while dark bodies resembling embryo connective tissue corpuscles abounded. No well defined Meynert "spider-shaped" cells were discovered. The ganglionic elements were shrunken and their processes ill-defined, a few large nerve cells with granule contents were observed lying in clear spaces, as though contracted from areas they once filled. Sclerosed patches abounded in the sections examined. With the exception of the lesions in the bregmatic region the post-Rolandic parts were mainly involved. The ventricular endyma was nodulated in parts affording Spitzka's "ground glass" appearance. Comparatively few healthy ganglionic bodies were discerned in over a hundred sections taken from different parts of the cerebrum.

Remarks.—The frequency of paretic dementia occurring among women as compared with its occurrence among men. We

have investigated thirty-nine different authorities, and have calculated the average proportion to be about one to eight. This includes Kiernan's cases. Neumann,* from not having seen a single case, denied the existence of paretic dementia among females. Sankey† inclines to the belief that sexual excess plays a part in the production of the disease, but the cases he cited show that there were, in addition to the sexual excesses, great vicissitudes.

Dickson ‡ favors the views offered by some writers, viz.: the liability, etc., but considers emotional mental strain as the great cause.

Luys || says that in existing social conditions males lead a much more active life than females, and are more subject to mental and emotional overstrain than females. Dr. Clevenger thinks the emotions preponderate in women, and even though carefully housed and cared for, nearly every woman has to bear at certain periods considerable tension of feeling, more probably in proportion to her possession of other mental qualities, which confer endurance.

Some authors state, the affection among the rural classes is markedly less frequent in females than is the case among the civic population, and is much more frequent with the hand-to-mouth, the trading and speculative classes, where the wife (Kiernan) takes an active part in her husband's business, than among the classes where she is confined at home. There is a marked relationship between the menopause and paretic dementia, as some writers have stated—there is a mental disturbance at this period predisposing to the psychosis. The prevalent type is the quiet form, which may account for the infrequency of its observation, and it is rarely met with among the female Irish in the South of Ireland.

In the discussion Dr. J. G. Kiernan stated, that even admitting females to be more emotional than males, when they are confined to their household duties, which are more monotonous than those of the male class of a speculative nature, the per-

* Lehrbuch der Psychiatrie, 1859.

† Lectures on Mental Disease.

‡ Medicine in Relation to Mind.

|| Maladies Mentales.

centage of cases among them is one to every 6 or 8 of males. In France there is a middle class (the Bourgeoise) where a wife takes an active part in her husband's business, and paretic dementia occurs in them. Regarding the ætiology, so far as alcoholic excesses go, statistics are worthless. In 160 cases reported, 116 were intemperate, but this is a symptom of the affection, instead of a cause. In British Guiana, where the people indulge in excesses of a sexual nature as well as the alcoholic, and also where syphilis prevails to a considerable extent, the disease is unknown, although at Berbes, where the asylum is located in British Guiana, the Superintendent reported one case, that of a male, who came there from Europe, and was afflicted with the malady ere he came to Berbes.

Some French authors state syphilis is not a predisposing cause, whilst Dr. Clevenger thinks paresis is very largely due to inherited or acquired syphilis.

Dr. R. Tilley thought if emotional strain had anything to do as a cause of this debility, that a Board of Trade speculator was much more apt to have it than a mechanic who gets his pay regularly, and yet in the large portion constituting the business class we scarcely ever hear of cases.

Dr. Kiernan stated he had no doubt but that the theory regarding emotional strain is true. The easy-going class in Ireland (Celts) do not have it, as may be illustrated by their not worrying as to how to prosper. In this city the emotional strain in those living from hand to mouth are the largest proportion who have this trouble; while Jessen, a Scandinavian alienist, traced all cases to congenital or acquired syphilis.

This topic being concluded, Dr. Henry J. Reynolds read an interesting paper on the "Treatment of Urethral Stricture."

Dr. W. L. Axford was much interested in the remarks embodied in the paper just read, and said the author took the extreme views advanced by Dr. Otis, of New York, and that the advances in urethral surgery to-day are due principally to Otis. In strictures of large caliber the best way to treat them is to cut them, as there is but little risk in doing so. In some cases of stricture, of traumatic origin, this method is hardly admissible, and Syme's operation is then preferable—external

perineal urethrotomy. The value of the acorn sound is greater in determining a stricture than that of the urethrometer, but to use the acorn instrument, the meatus may have to be incised. I want to ask the writer if he thinks in all cases of gleet there is stricture? Answered, yes. Then in all cases of stricture is there gleet? Answered, no.

Dr. C. E. Webster cited briefly a number of cases of stricture of large caliber he had seen operated upon. The first patient was in the first stage of pneumonia, and subsequently died of lung trouble. The second patient had organic disease of the heart, and died of the heart affection. A third case operated on had Potts' Disease. None of these patients were benefited by the operation. The same surgeon, who is a teacher in a well known school, operated for phymosis in a case of bow legs, expecting thereby to relieve this deformity, as no other treatment for the bow legs was recommended. Then the following two questions were asked the reader of the paper: First, whether he would operate upon a stricture of large caliber if no local symptoms were present; and second, whether acorn sounds of large size, which pass by dilating the urethra, may not indicate a stricture, where the condition is not pathological, but simply due to a varying degree of elasticity along the tract of a healthy organ?

Dr. C. T. Fenn gave his experience as a physician, (more than that of a surgeon) in introducing the finest sound, by reciting a case that not long since had been under his care. One of our well-known surgeons also saw the case with him in consultation; but in essaying to pass the smallest steel sound had failed, and then resorted to aspiration of the bladder over the pubes. He had previously, however, introduced a filiform bougie, and the passage was effected by "passing it around" the stricture, as was determined at the autopsy, when the stricture was dissected and found to be "fibrous," and in connection with it there was infiltration of urine, which caused death. The speaker did not agree with the author of the paper in wanting to operate on so many of this class of cases, and thought the operation should be approached with no little caution, as the dark urethral channel could not be seen whilst operating upon it.

Dr. R. Tilley asked the reader why he thought it was necessary in his cases to render the urine alkaline before operating? and why this is better than the normal urine, which is but slightly acid? Normal urine, he believed, was practically innocuous for wounds.

Dr. G. C. Paoli's experience and observation warranted his saying that only temporary benefit was derived from cutting operations, and that we should be very careful in making these incisions. Exudation takes place in two or three years at longest. He has treated between five and six hundred cases of stricture of the urethra by gradual dilatation. His patients were satisfied with this continual method, and all were successful, so far as he knew, without the cutting. He believed one should attain the object by the method of gradual dilatation, and that it is far preferable. He then gave a history of a case which was operated on 34 years ago in Cincinnati. There was considerable haemorrhage at the time; temporary success followed, but in a short time the caliber of the canal became lessened and indurated. Every fortnight for a long period of time he passed a No. 8 or 9 Otis curve sound.

Dr. L. H. Montgomery thought stricture in the male a cause of sterility, and that the power of propagation was in many instances lessened by it, and inquired as to this; also of the writer, how long he required a patient to take an alkali, before the urine became alkaline, and if bicarbonate of soda in 5ss doses was not superior to the citrate of potash in rendering urine alkaline?

Dr. D. W. Graham said, that one of our eminent men in this city stated long ago, he thought a previous attack of gonorrhœa would cause sterility in the male. To cut a stricture is malpractice, and to cut what is revealed by an acorn sound, he regarded also to be malpractice.

Dr. Reynolds in closing said, he thought it was essentially necessary to dilute the urine, to do so, a patient will not void it so frequently, and in cystic irritation it should be rendered alkaline. In answer to Dr. Webster, he thought the condition to which he alluded would be extremely rare, a patient would not know he had stricture, unless local symptoms presented. For then a patient will consult me, and I probably should then ad-

vise an operation. Regarding one speaker's interrogatory about stricture being a cause of sterility, he thought this was not the case; also that the bicarbonate of soda or potash, given for two or three days, was equally good with the citrate of potash to produce alkalinity of the urine.

The resignation of Dr. D. F. McPherson was accepted on account of his removal to Buffalo, N. Y.

Adjourned.

L. H. M.

CHICAGO MEDICAL SOCIETY.

The following embodies the scientific proceedings of the meeting held at the Pacific on the evening of February 18, 1884.

The first paper was read by Dr. Wm. L. Axford, who gave a report of "A Case of Ventral Hernia," occurring in a male, and exhibited the large pathological specimen.

The following in brief is the report substantially as that given by the author:

It is my privilege to present before the society this evening a pathological specimen, removed post-mortem, from a very interesting case, which for a long period of time had been the subject of considerable doubt to a number of physicians. The history of the case is as follows:

F. B., aged 56, weight 340 pounds, an enormously large and fleshy man; had been troubled for the past twenty years by a tumor, situated above and to the left of the umbilicus. Did not know any cause for its appearance (having never received any injury along the linea alba), which was at first that of a slowly growing tumor. He wore a pad for a number of years, and in this way was able to keep the mass within bounds, but during the past five years it became uncontrollable and had been a constant source of trouble, dating back to a very severe attack of constipation, followed by severe vomiting; in fact, so near as I can learn, at that time he had all the symptoms of a strangulated hernia. Two years before death another strangulation occurred, and at that time it was my good fortune to see him. In each instance the symptoms of strangulation seemed to have subsided under the use of opiates, with rest

in bed. In the intervals the patient had weekly attacks of what was described as a hardening of the mass; at such times it would increase to an enormous size, include the umbilicus in the swelling, and become extremely painful, but he did not vomit. He would go immediately to bed, and after a day or two of rest it would subside.

When I first saw the case, at the time it was strangulated for the second time, the tumor was about the size of an adult head, hard and tense, but resilient to the touch.

Percussion gave dullness over the upper and left part of the mass, while over the lower two-thirds the percussion note was tympanitic.

A number of diagnoses had been made by a variety of physicians, such as tumors of various kinds, particularly fatty tumor, hernia, hernia with fatty tumor, etc., etc. The physician who first treated the case evidently took it for a hernia, as he treated it by a pad, and controlled it for a long time. For my own part I believed it to be a ventral hernia containing intestine and omentum, thinking that the dullness over the left and upper part could be well accounted for by supposing that so large and obese a man would naturally have a thick, fatty omentum, which, from its anatomical relations, could easily occupy the left and upper portion of the hernial sac.

Two years later I received an invitation to assist at the autopsy, the patient having died with symptoms similar to those of the two previous occasions.

I now have the pleasure to present to you the sac of the hernia. No omentum was found in the sac; it contained small intestines alone.

In the discussion considerable contrariety of opinion was manifested regarding the use of a rubber bandage applied in treating this variety of hernia, as well as the utility of it in femoral, strangulated femoral, and other forms of rupture that occur in both sexes. Its advantage was affirmed by some and denied by others. It was also argued by one speaker that he personally had met a case of strangulated femoral hernia that recovered without sloughing or an operation, and that so far as he knew little or no treatment had been pursued, which result he admit-

ted was a surprise to him, for when he was called to see the patient the latter was suffering acutely from well marked symptoms of strangulation, yet within a few days the man recovered and resumed his duties attending a garden of which he was owner.

The second paper was read by Dr. L. A. Harcourt, who reported three cases of arrested foetal development. In the most interesting case there was entire absence of the abdominal walls and the umbilical cord. A synopsis of the cases reported is hereby appended.

CASE I.—On the 4th of March, 1881, I was called to see Mrs. C., living on S. May St., in labor with her fifth child. Some months before, she had been threatened with an abortion, having had pain and haemorrhage for several days; but rest and anodynes averted the calamity. I attended her at the time, knew she was pregnant, but did not look for her confinement so soon.

On examination in the present case, found the os uteri about two-thirds dilated, the membranes protruding into the vagina, but only a membranous tumor could be felt by the finger. Thinking there might be a breech presentation, and that instrumental aid might be necessary in the delivery of the head, I went for my forceps, a couple of blocks away, requesting the lady in the meantime to go to bed. Returning in a few moments, I found her in severe pain, the membranes protruding from the vulva, and as the pain subsided, I passed my finger beyond the tumor, which was a spina bifida, and distinctly felt the foetal head. The os uteri being fully dilated, I ruptured the membranes at the next pain, and almost in an instant, the child was swept into the world with extraordinary force. I felt the warm blood gush on to my hand, and feared I had a case of post-partum haemorrhage to deal with. A glance at the woman's face, however, banished my fear, and left me to look for some other explanation of the haemorrhage. The blood came from another source, however. The child and placenta came into the world simultaneously. Looking at the child, which was alive, I saw its face grow white, and a second look revealed the fact that its abdominal parietes were wanting. The anterior and part of the lateral walls of the abdomen were absent, from a little above the os pubis to a little below the cuneiform cartilage, leaving the abdominal viscera ex-

posed. The intestines of course protruded, and the bladder, kidneys, stomach, and other organs could be distinctly seen and felt. The integument of the abdomen above, below, and laterally degenerated into membrane, and a membranous fringe from three-fourths of an inch to an inch and a half in width, resembling that attached to the placenta, and from which something had been irregularly torn, encircled the opening.

The lower extremities formed an obtuse angle with the body, the hips projecting to one side, as if the limbs of one foetus had been engrafted obliquely upon the trunk of another. There was spinal curvature in the lumbar region. Altogether, it was something of a monstrosity, the sex of which I have forgotten. An examination of the child, the placenta, the vagina of the woman, and the bed, failed to discover the slightest trace of an umbilical cord. My impression is, that the membranes were attached directly to the child's abdomen, and were torn from it by the child's expulsion. The child lived only a few moments. The mother made a good recovery. She was not permitted to see the child until it was dressed, but knew there was something wrong, as no cord had been tied. She told me afterwards, in explanation of the abnormal condition of things, that, before she was threatened with an abortion, she had seen a man, who had fallen from a scaffold, whose abdomen was so torn that the intestines protruded from the rent, and who died in a few hours. The shock she received at the time, she thought caused an arrest of foetal development, giving rise to the condition mentioned.

When called to the case, I was in attendance upon another lady whose labor was tedious, and to whom I was anxious to return; hence my examination of the foetus before leaving was not as thorough as it ought to have been. On my return the child was dressed, and the afterbirth destroyed.

In the interest of science, I tried to get the child, offering to charge nothing for my services, if they would give it to me; but while the father seemed to appreciate my motives, he said, the mother would not listen to the proposition under any circumstances. Had I secured it, I would have written up the case long ago, and exhibited the foetus to the society.

CASE II.—Some twelve years I was invited by Dr. Tousley, of Weyanwega, Wis., to see what he called a headless child recently born. I went with him and found the statement only partially true. The essential part of the head, the brain, was there, a part of its osseous covering alone being absent. It was a case of imperfect or arrested development of the cranial vault, a part of the frontal, temporal, parietal and occipital bones being wanting. They were absent from a line beginning a little above the supraorbital arch, passing backwards, arching slightly over each ear, and passing through the occipital protuberance. The brain and its coverings were intact, the longitudinal fissure well marked, giving rise to two yielding tumors which the doctor at first mistook for the breech. The face was broad and flat, the nose flattened, the eyes small, round and protruding, probably from pressure upon the brain during labor. Every feature was distorted and repulsive in the extreme, the countenance resembling in some measure that of a hog.

The mother was a German, and she too had an explanation to offer. It was that some time after conception she came suddenly where hogs were being butchered, and saw a number of them decapitated. She was startled; hence, as she thought, her misfortune.

CASE III.—While in Clinton, Wis., I was called to see a man who had fallen from the rafters of a house a story and a half high, striking against the joists and sleepers in his descent, and sustaining some injury about the back of the neck and between the shoulders. I removed his shirt to examine his injuries, and found an abrasion of the integument extending from the occiput to the second or third dorsal vertebra. The injury, though slight, looked bad at the time, the shoulders and upper part of the back being more or less spattered with blood. While stripped, his wife came to the place, and seeing her husband bleeding, became very much excited and alarmed. She was then in the third month of pregnancy. About four months later she prematurely gave birth to a child, on whose neck and between whose shoulders was a mark, the exact counterpart of the injury sustained by its father some months before. A triangular space extending from the occiput downwards between the shoulders was covered by a red-

dish membrane, presenting, in miniature, the appearance of the father's neck when seen by the mother. Reddish spots were scattered about the back and shoulders, corresponding to the blood stains on the father.

These three cases came under my personal observation, and the facts are truthfully given. Whether the maternal impressions and the subsequent morbid developments stand in the relation of cause and effect, or were mere coincidences, it is not my province to determine; but they seem to confirm the belief entertained by many, that Jacob knew whereof he bargained when he agreed with Laban to take as hire all the brown lambs and speckled goats and cattle born after a given date.

Discussion of moles, or maternal impressions, or mother's marks, was participated in by a number of the members.

Dr. A. Lagorio recited briefly the main points concerning a case he saw last April, although the woman who had been confined was attended by a midwife. A babe was born having double hare lip extending through the alæ of the nose. The nose was flattened; there was a cleft in the palate; the eyes were closed, and the lids could not be separated; there was no rotundity of the eyeballs. The child lived fifteen or twenty days, dying from inanition. At the autopsy there was discovered an entire absence of the eyes. The mother was 40 years old; an Italian. She had undergone during the period of gestation great hardships, such as scrubbing, using a pick-axe to remove stumps and roots; she also carried weights on her head, such as coal sacks. The poor woman supposed the midwife to be a witch, and it was her belief that her babe had been marked by the midwife just before its birth.

He believed there were no cases on record in this country where a child had been born without eyes, or where the lids could not be separated. In Vienna three cases have been reported where the eyes were missing, or where the eyelids were closed at birth. In one of these cases the lids were separated and the eyes opened, and subsequently the child perceived objects.

Dr. S. J. Avery gave a history of a case he had seen that may properly be regarded as coming under the subject discussed in the paper. Being called to attend a female patient about to be

confined he met with a breech presentation. All went on very well until delivery of the shoulders, which act, however, was accomplished, but with more than ordinary difficulty. In the delivery of the head, he discovered that this was hydrocephalic, and measured, he thought, eight or nine inches antero-posteriorly. In the delivery cephalotomy was performed. The mother recovered with no serious trouble or cellulitis.

Dr. J. G. Kiernan gave an abstract of a number of cases that had been reported in different journals and other literature upon this subject, purporting to be derived from embryologists. Some of the cases cited were very extraordinary. Men skilled in embryology have little doubt but that a sudden and violent mental shock may arrest development in a foetus.

The Secretary knew that Dr. Harcourt's actual experience had been reported in the paper, and he had requested it might be presented to the society.

Adjourned.

L. H. M.

DECISION UPON AN ANATOMY ACT.—The law of Maryland makes it a criminal offence to take bodies from the ground after burial for dissecting purposes, unless these bodies are buried in potter's field. "Last spring," says the *Maryland Medical Journal*, "three men were arrested for having in their possession bodies obtained from Bay View, and being tried before Judge Fowler, at Towsontown, were convicted. The counsel for the defense maintained that the Alms-house burying ground was a potter's field, and hence was excepted by law, but Judge Fowler did not entertain this opinion, and the prisoners were declared to be guilty. This decision was appealed from, and after several trials the question was finally settled by Chief Judge Yellott on Friday last, who said that 'any place where unclaimed paupers or strangers were buried was a potter's field,' and the prisoners were acquitted, after a confinement in jail of eleven months in one case."—*Medical Record*, March 8, 1884.

Domestic Correspondence.

TO THE EDITORS OF THE CHICAGO MEDICAL JOURNAL AND EXAMINER.

Gentlemen: Recently I was accorded space in your journal for a statement in relation to the early history of the Cook County Insane Asylum and Poor House, in response to an article therein from the pen of Dr. Clevenger, of the present medical staff of this institution, in which the same was distorted and an injustice accordingly done to those formerly connected therewith as officials, together with myself as physician in charge.

Another article has appeared in your January number, which compels me to crave a further indulgence in your columns in the interests of fairness and of the profession. Reference is had to the case reported by A. W. Hagenbach, M.D., Superintendent of the Cook County Infirmary, under the head of "Ligation of Femoral and External Iliac Arteries," in which I am referred to as having made the primary amputation.

Without courting controversy with any of the students connected with the medical staff of this institution, a reference to this case on my part becomes excusable, if not, in fact, demanded. That I should be singled out again, and my practice and skill be made the subject of invidious comparison with that of the parlor scribes of a public institution is doubtless due to the proximity of my location as a practitioner. Members of the profession more distantly located are to be congratulated in escaping the annoyance to which I am being subjected. Situated near the point of convergence of several railroads, accidents necessitating amputations are of frequent occurrence, many of the patients proving to

belong to the class known as "tramps" or paupers. The result has been a contribution to me of a moderate line of surgical practice, by no means lucrative, and entirely unsolicited. Under such circumstances, it is most respectfully submitted that the amenities of the profession should not allow the operator to be deprived of the only compensation received in such cases, viz.: a fair recognition and treatment of his services performed.

Only a brief reference need be made to the history of the case in question as given by Dr. H. Its importance can be weighed with prescription scales.

According to the statement made by him, the patient in the case was received from me, after the primary operation, on "October 22, 1882." From this date to "October 26, 1882," no account of the condition of the patient is historically vouchsafed in the report. From thence to "November 9, 1882," covering a period of *fourteen* days, the profession is left without a word as to the condition and treatment of the patient, a degree of incompleteness unaccountable in the make up of a reported case designed to afford the least instruction to the profession. Under a course of subsequent treatment such as would be inferred from such a history, what reader, professional or otherwise, would make the slightest investment in the notion conveyed by the report as a whole, that the amputation as performed by me was such as that reasonable treatment and care thereafter would not have restored the patient? But, continues Dr. H., at this time "both bones protruded, and there was found a *large bundle* of silk ligatures cut close to the arteries, ligated at bottom of wound, etc." Allowing that there were but two arteries ligated, as would be usual in such cases, about what sized "bundle" would he claim "two silk ligatures cut close to the arteries ligated" makes? The most visionary stretch of fancy should not lead to such a reckless misapplication of terms. No surgeon has as yet been known to exhaust his entire stock of ligatures upon one patient, and such an event is not likely to occur.

A reference to my record of the case shows to a certainty that the patient was received by me, and the amputation performed immediately after the accident, on *November 1, 1882*, while claimed to have been under treatment at the infirmary from

"October 22, 1882," a period of *eleven* days prior to the accident! If the claim be true, then the patient must have been first received as a guest at the Poor House, and the doctor must have got his accompanying "bundle" as a pauper, confused with his subsequent "sutures" as a patient.

There is no disposition, however, on my part, to take any exceptions to the treatment bestowed upon the patient by Dr. H. covering that period prior to the accident and amputation. It was doubtless the best part of it.

In cases of this kind that may arise hereafter, after an amputation has been performed by me and a transfer of the patient to any public infirmary for treatment and care, I shall be disposed to claim a return of the patient if any difficulty is encountered thereat in effecting a permanent cure and restoration, but it must be done in season, and not after any lengthy experimentation upon the patient has been practiced.

In giving my version of the case reported, I beg leave simply to submit the following affidavits, which furnish their own explanation, and with the single observation that the object of this communication will be accomplished if my professional reputation shall be removed from under not a *cloud*, but a *shadow*, and medical literature hereafter be promulgated with a larger degree of fairness and accuracy.

D. B. FONDA, M.D.

Dated at Jefferson, this 5th day of February, 1884.

STATE OF ILLINOIS }
COOK COUNTY. } ss.

I, David B. Fonda, being duly sworn, on oath say: That on November 1, 1882, at his office in Jefferson, Cook County, Illinois, he, as a physician and surgeon, performed an amputation of the left leg of one J. C. McMullen, being the same person thereafter committed to the charge of Dr. A. W. Hagenbach, Physician in charge of the then Cook County Poor-House, and the one made mention of by him in the January number of the CHICAGO MEDICAL JOURNAL AND EXAMINER; that the operation was performed by him in person and in presence of, and with the assistance of, Drs. C. W. Mercereau and W. Snyder, of Jefferson, and Mr. Fred. T. Franks, a student of medicine of Chicago, and on account of the following injury sustained by at-

tempting to alight from a moving freight train, on the Chicago and Northwestern Railway; at Plank Road Station, viz.: Compound comminuted fracture of the left tibia and fibula, necessitating the same, and in following manner, to-wit: The amputation was made in the upper portion of the middle third of the leg, with long posterior flap; that each of the arteries were separately ligated at the hands of Dr. Mercereau with silk ligatures, ONE strand of which, in each instance, was cut short at the point of ligation, the other carried external to the wound and fastened externally by an adhesive strap binding them to the anterior part of the leg, and as an auxiliary measure of protection; that the flaps were brought in apposition by five (only) interrupted sutures, and secured by adhesive strips and bandage; that the tourniquet was adjusted in manner to compress the popliteal artery, and left in position, with instructions to the person removing the patient to tighten the same in case bleeding should occur during process of removal, and for the purpose generally of guarding against accident from a possible secondary haemorrhage: that a note from him to Dr. Hagenbach accompanied the patient, setting forth the above facts, and with a request that he take charge of and return the tourniquet after its use.

D. B. FONDA, M.D.

Subscribed and sworn to before me, a notary public, this 5th day of February, 1884. ISAAC N. HUESTIS.

[Notarial Seal.]

STATE OF ILLINOIS, } ss.
COOK COUNTY. }

I, Fred. T. Franks, being duly sworn, on oath say: That on November 1, 1882, I was present at, and assisted Dr. D. B. Fonda to perform, the amputation described in his affidavit, and that I do know of my own knowledge that it was done on the day, and in every particular in manner and form as described and set forth in his affidavit. FRED. T. FRANKS.

Subscribed and sworn to before me, a notary public, this 5th day of February, 1884. ISAAC N. HUESTIS.

[Notarial Seal.]

[April,

STATE OF ILLINOIS, } ss.
COOK COUNTY. }

I, C. W. Mercereau, being duly sworn, on oath say: That on November 1, 1882, I was present at and assisted Dr. D. B. Fonda in performing the amputation described in his affidavit; that I ligated the arteries in manner as described by Dr. Fonda, and that the amputation was made the day, and in manner as therein described.

C. W. MERCEREAU.

Subscribed and sworn to before me, a notary public, this 5th day of February, 1884.

ISAAC N. HUESTIS.

[Notarial Seal.]

BURLINGTON, Iowa, March 12, 1884.

MESSRS. EDITORS:—I take the liberty of communicating to you a fact corroborating a statement made by Dr. Lagorio at the meeting of the Chicago Medical Society on the 18th inst.

Two years ago, while visiting a patient a short distance in the country, my attention was called to a newly born blind calf. It was perfect in every way, with the single exception that it had no eyes and no place for them. There was no depression in the skull where the orbits should have been.

I have also in my possession the head of a pig, with a single large eye in the center of the forehead. There is a projection over it, of a cylindrical portion of the integument resembling the penis of a boy. There is, however, no aperture in the latter.

I should have mentioned that the calf was suckled well, and the farmer sold it to a butcher, who had served it out as veal before I could secure the specimen.

Yours truly,

G. R. HENRY, M.D.

Reviews.

INSANITY AND ITS TREATMENT. By SAMUEL WORCESTER, M.D. New York: Böericke & Tafel. 1882. Cloth, \$5.

INSANITY: Its Classification, Diagnosis, and Treatment. By E. C. SPITZKA, M.D. New York: Birmingham & Co. 1883. Cloth, \$3.

A TREATISE ON INSANITY IN ITS MEDICAL RELATIONS. By WILLIAM A. HAMMOND, M.D. New York: D. Appleton & Co. 1883. Cloth, \$5.

PSYCHOLOGICAL MEDICINE. By E. C. MANN, M.D. Philadelphia: P. Blakiston & Co. 1883. Cloth, \$5.

MEDICAL JURISPRUDENCE. By A. MC. L. HAMILTON, M.D. New York: Birmingham & Co. 1884. Cloth, \$5.

The progress and features of American psychiatry in the last few years have been decidedly flattering to nativistic physicians, and the works just enumerated are striking illustrations of the various phases of thought which are to be detected in the medical world on this subject. The first work is a very fair condensation of the older American and more recent European literature. It is written by a homœopathic renegade from the regular profession, and the only original feature about the book is the decidedly original ideas as to the purpose of therapeusis. Chloral hydrate is recommended in thirty grain doses, and other drugs in equally large doses; in case homœopathic therapeusis fails, for the purpose of preventing "the patient passing into the hands of the old school profession." If the therapeutic vagaries were removed, the work would be of no little value.

The second work is by a very well known physician. It is up to the times. It is well written, but cannot be skimmed; it must be studied. The classification adopted is modified from that of Krafft-Ebing and in the opinion of Tamborini, one of the leading Italian alienists, (no mean authority), is a decided improvement on that classification. Like everything scientific, it is not simple, but requires careful study. American alienists are quoted at length. While the author has thus done unusual justice to the alienists of his native land, he has not neglected those of Europe. A perhaps objectionable feature is the severely critical analysis to which the author subjects the writings of persons made alienists by the grace of politicians. Reference is made to the much neglected question of simulation of insanity, and concealment of insanity by the insane. The classification of the author is as follows, divesting it of its generic and specific relations: "Mania, melancholia, katatonia, transitory frenzy, stuporous insanity, primary and secondary confusional insanity, primary deterioration, terminal dementia, senile dementia, hebephrenia, paretic dementia, luetic dementia, dementia from coarse brain disease, delirium grave, alcoholic, hysterical, epileptic and periodical insanities, idiocy, imbecility, cretinism, monomania, traumatic, choreic, post febrile, rheumatic, gouty, phthisical, sympathetic and pellagrous insanities." It will be obvious that this is well adapted for clinical purposes. The book is a sound, practical, scientific guide in the study of psychiatry.

Dr. Hammond's work makes an attempt to demarcate between legal and medical insanity. The best legal minds have concluded that what is fact in science cannot be fiction in law; and, viewed from this standpoint, Dr. Hammond's views are, as has been said by the *Alienist and Neurologist*, a weak compromise with error. The classification of Dr. Hammond is complex, and, it must be confessed, inconsistent. It is as follows: 1. Perceptual insanities, in which there are derangements of one or more of the perceptions. A, illusions; B, hallucinations. 2. Intellectual insanities, in which the chief manifestations of mental disorder relate to the intellectual being of the nature of false conceptions, or clearly abnormal conceptions. A, intellectual monomania with exaltation; B, intellectual monomania with depression; C,

chronic intellectual mania; D, reasoning mania; E, intellectual subjective morbid impulses; F, intellectual objective morbid impulses. 3. Emotional insanities, in which the mental derangement is chiefly exhibited with regard to the emotions. A, emotional monomania; B, emotional morbid impulse; C, simple melancholia; D, melancholia with delirium; E, melancholia with stupor; F, hypochondriacal mania or melancholia; G, hysterical mania; H, epidemic insanity. 4. Volitional insanities, which are characterized by derangement of the will, either by its abnormal predominance or inertia. A, volitional morbid impulse; B, aboulomania (paralysis of the will). 5. Compound insanities, in which two or more categories of mental faculties are markedly involved. A, acute mania; B, periodical insanity; C, hebephrenia; D, circular insanity; E, katatonia; F, primary dementia; G, secondary dementia; H, senile dementia; I, general paralysis. 6. Constitutional insanities, which are the result of a pre-existing physiological or pathological condition, or of some specific morbid condition affecting the system. A, epileptic insanity; B, puerperal insanity; C, pellagrous insanity; D, choreic insanity, etc. 7. Arrests of mental development. A, idiocy; B, cinism. It is quite unnecessary to do more than quote this classification, to show that it is somewhat inconsistent. The classification is a stumbling block, rather than an aid. The descriptions of the generally accepted forms are models of excellence. The work, as a whole, can be recommended as a good guide in clinical psychiatry, but contains unsound and dangerous opinions on legal medicine, as it enunciates doctrines opposed, as even its author admits, to abstract justice.

The first thing about Dr. Mann's book which strikes the reader, is its illy digested character. It looks as if it had been "scissored" from the author's contributions to periodical literature. It is, when carefully sifted, a good guide in clinical psychiatry; a poor one in pathological histology, since the changes produced by manipulation are not guarded against. The work enunciates sound views in legal medicine. Carefully edited and skilfully condensed, it could be made a good text-book. Its chief faults are that it lacks clearness and system.

The last work has all the faults of Dr. Mann's book, and none

of its virtues. Its author is not acquainted with the fact that the insane feign insanity. He is unacquainted with many more facts an alienist ought to know. The book is worthy of the author, who has declared upon the witness stand that "if the insane knew right from wrong, and *could* not control themselves, they should be punished the same as the sane."

Three of these works are desirable acquisitions. Spitzka's book requires brain work in its perusal, but, its general principles grasped, proves of great value. Hammond's work is easily perused, readily assimilated, but is not a very safe guide in practice, because of the exceptional views of its author. Dr. Mann's book, from its lack of system and prolixity, requires equal labor in its perusal with that of Dr. Spitzka, and this labor is not as well rewarded. Worcester's book is valueless because of its *dishonest* therapeutic views, while Hamilton's book has all the vices of the works of Hammond and Mann in a greater degree than either, and none of their virtues, and displays the erratic views of an author who proclaims that a *low* facial angle is a sign of intellectuality.

JAS. G. KIERNAN.

THE HOT WATER CURE.—A writer in the *Lancet* (Dec. 29) gives his experience of hot water as a curative agent in indigestion, for which he has suffered for many years, and by the judicious use of which he has been relieved. He says half to a tea-cupful of hot water (not boiling nor yet lukewarm) sipped before a meal will enable nine out of every ten sufferers from indigestion to digest that meal with comfort; and in cases where a fulness and uncomforatableness are felt after a meal, a similar quantity taken in a similar manner will give relief.—*Maryland Medical Journal*.

THE names of two distinguished Western physicians are inscribed to-day on the long roll of the majority, Dr. Lunsford P. Yandell, of Louisville, and Dr. George Englemann, of St. Louis. Each of these gentlemen had won a brilliant reputation in the profession; and each had an authority that was respected, not only in this country, but abroad. We can ill afford to lose the lustre of these names from the list of eminent professional men in the West.

Editorial.

ANTISEPSIS FROM THE LATER STANDPOINT.

It is within the memory of most medical men that for a healthy healing process a certain degree of inflammatory action was regarded as the main requisite in and about a wound. The only provision was that the inflammatory process should be limited in degree. Such expressions as "the accompanying inflammation will soon glue the parts together;" and "all wounds must inflame," were often used as descriptive of the natural history of wound repair. But antiseptic surgery has shown that the slightest process of inflammation in wounds, is the cause of delay in repair. The redness, heat, oedema, and pain are only evidences of putrefaction and fermentation of the wound discharges. They are the protests of nature against the entrance of this material into the general circulation. With the fermentation come myriads of micro-organisms of the bacterial order, the latter related to the former as cause and effect. To-day, the surgeon's principal aim is to prevent this poisoning of a wound. He desires to secure healing without inflammation, without pus formation, without pain, and by first intention. This result is only attained by antiseptic practice. The method of antiseptic practice is now largely a matter of taste.

If the principle be faithfully and honestly kept in mind to prevent septic infection through the air surrounding the patient, the water with which his wounds are bathed, and the hands, instruments, and appliances by which the necessary surgical manipulations are made, the end is reached. It is, beyond question, the duty of every practitioner to render himself familiar with the

technique of the processes and appliances necessary to render every wound aseptic. No better plan can be adopted than a careful study and familiarity with the details of Listerism, the purest and best of all antiseptic methods. From this method departures to those which are simpler can then be safely made. It is well enough to speak of cleanliness and perfect rest in wound treatment, but neither of these can be attained without absence of fermentation, absolute control of all haemorrhage, perfect drainage, and close coaptation. The accumulation of wonderful results in surgical practice following the introduction and adoption of the principles of antiseptic surgery, as formulated by Mr. Joseph Lister, steadily increases. Compare the results of gunshot wounds of joints during our late war, and those obtained by Carl Reyher in the Russo-Turkish war. Of 18 patients reported by Reyher treated antiseptically, 15 recovered with mobile joints, 3 only dying. With us the rule was almost certain death or amputation. Reyher also gives 40 patients operated upon and manipulated without antiseptic precautions, with 34 deaths and 6 recoveries. Of these 5 lost their limbs. He also gives 23 patients left to themselves, all of whom died but one.

Nearly every text-book condemns the victims of penetrating gunshot wounds of joints to amputation of the limb. Antiseptic surgery and fixation, together with rigid abstention from disturbance of the wounds with septic fingers and probe save nearly all, and these frequently with mobile joints. It is here surely that the too inquisitive surgeon furnishes the straw which breaks the back of nature. These are only a few among a large number of revolutions in the management of dangerous wounds that have been wrought by this special practice, but these alone are so striking as to cause those to blush who still sneer at the notions of antiseptic work, and go on in the old method of slovenliness, dirt, and death. A Lister dressing is costly, and possibly cannot be adopted in universal practice. Many other methods safely take its place, and some are cheap, found everywhere, and capable of being used in the most adverse circumstances with such materials as aseptic sawdust, shavings, sugar, dried earth, and other absorbent substances. A solution of corrosive sublimate 1 to 2,000 ($7\frac{1}{2}$ grs. to water 1 qt.) thoroughly incorporated with any of these

substances will furnish an absorbent antiseptic dressing sufficient to answer every purpose of cleaning wounds and prevention of fermentation and putrefaction changes with their long train of ills and woes. Equally good results often follow the use of the dry dressings with antiseptic cotton, or tow, or oakum. The only fact to be borne in mind is the necessity of recognizing the imperative importance of the aseptic condition and the adoption of the best methods circumstances will allow. When military field surgery, with antiseptic care and treatment presents a mortality of only 16 per cent. in the wounds heretofore most dangerous of all, the percentage of civil surgery ought certainly to be expressed by the single and smallest numeral.

A CERTAIN American was dyspeptic in London, and went to consult the great doctor, Abernethy, who was one of the bruskest men that ever lived, but a first-rate physician. "What's the matter with you?" asked Abernethy. "Why," replied the American, "I presume I have the dyspepsy." "Ah!" said he, "I see; a Yankee—swallowed more dollars and cents than he can digest." "I am an American citizen," was the reply, "and I am Secretary of Legation at the Court of St. James." "When did you arrive?" "Three days ago." "Ah! then you will soon be cured of your dyspepsia." "How so?" "Well, in the company you'll be obliged to keep you'll have to eat like a Christian." The gentleman did not know Abernethy's peculiarities, and made some sharp reply, on which Abernethy broke out: "I'll be hanged if I ever saw a Yankee that didn't bolt his food whole like a boa constrictor. How the d—l can you expect to digest food that you neither take the trouble to dissect nor the time to masticate? It's no wonder that you lose your teeth, for you never use them—nor your digestion, for you overload it—nor your saliva, for you expend it on the carpets, instead of on your food. It's disgusting. You call it dyspepsia; I call it guzzling. If you take half the time to eat you do to drawl out your words, and chew your food half as well as you chew your tobacco, you would be well in a month." And Abernethy was right.—*Vanity Fair*.

Miscellaneous.

BOOKS AND PAMPHLETS RECEIVED.

BOOKS.

- A Manual of Pathology. Coates. Philadelphia: Henry C. Lea's Son & Co. Jansen, McClurg & Co.
- Insanity in its Medico-Legal Relations. T. Buckham. Lippincott & Co. Jansen, McClurg & Co.
- Venereal Diseases. Bumstead & Taylor. H. C. Lea's Son & Co. Jansen, McClurg & Co.
- Chemistry, Medical, General, &c. Attfield. Lea's Son & Co. Jansen, McClurg & Co.
- Chemistry, Organic, Inorganic, &c. Bloxam. Fifth Edition. Lea's Son & Co. Jansen, McClurg & Co.
- Manual of Practical Hygiene. Parkes. 2 Vols. Wm. Wood & Co. W. T. Keener.
- Training Schools for Nurses. Notes on Twenty-two Schools. W. G. Thompson. Putnam's Sons. Jansen, McClurg & Co.
- Hand-Book of Therapeutics. Ringer. Tenth edition. Wm. Wood & Co. W. T. Keener.
- Materia Medica and Therapeutics. Bartholow. Fifth edition. W. T. Appleton & Co. Jansen, McClurg & Co.
- Manual of Psychological Medicine. Edward C. Mann. Blakiston, Son & Co. W. T. Keener.
- A Treatise on Syphilis in Children and Infants. P. Diday. Translated by Whitley. Wood & Co. W. T. Keener.
- Medical Ethics and Medical Etiquette. A Symposium from the Liberal Standpoint.
- Elements of Histology. Klein. H. C. Lea's Son & Co. Jansen, McClurg & Co.
- Manual of General Medical Technology. Edw. Curtis. Wm. Wood & Co. W. T. Keener.
- Transactions of the College of Physicians. Third series, Vol. VI. P. Blakiston.

- Index to Transactions American Medical Association. Vols. I to XXXIII.
W. B. Atkinson, Sec'y.
- Parrish's Treatise on Pharmacy. Wiegand. H. C. Lea's Son & Co.
- Legal Medicine. Tidy. Vol. II. H. C. Lea's Son & Co. Jansen, McClurg & Co.
- St. Bartholomew's Hospital Reports. Vol. XIX., 1883. Smith, Elder, & Co., London.
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